

User Manual

Manual number
PTI-32-02/11/07/A

Scales with PUE C41H indicators

- Interactive Terminal



MANUFACTURER OF ELECTRONIC WEIGHING INSTRUMENTS

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NOVEMBER 2007

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1. INTENDED USE

Scales with PUE C41H terminal are industrial scales with a possibility of working in high humidity and a wide temperature range $-10\div 40^{\circ}\text{C}$. The terminal is equipped with fields of LEDs (light emitting diodes). Tarring within the whole range of measurement allows to determine the net mass of loads.

Functions:

- Tarring within the whole measuring range,
- Inscribing tare value,
- Automatic tare,
- Automatic print,
- Continuous transmission,
- Printout configuration (stable/immediate),
- Designing printouts,
- Minima mass,
- Force measurements in Newtons,
- Cooperation with computers,
- Cooperation with printers,
- Cooperation with external industrial buttons ZERO, TARA, PRINT,
- Cooperation with a barcode scanner,
- Cooperation with a transponder card reader,
- Totalizing,
- +/- control (checkweighing),
- Deviation in percents,
- Top mass latch,
- Dosing,
- Counting pcs,
- Weighings animals,
- Interactive terminal mode

User functions may have attribute of accessibility. For this reason it is possible to adjust scale to individual needs to provide access to only these functions which are currently needed. Attribute determination accessible / inaccessible is possible in user menu and described in further part of manual.

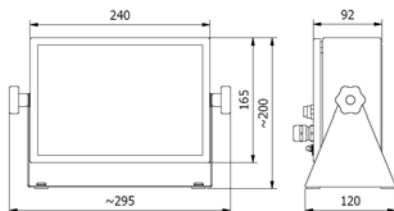
2. PRECAUTIONARY MEASURES

- A. Please, read carefully this user manual before and use the device according to its intended use.
- B. If the device is about to operate in a strong electrostatic field (e.g. printing houses etc.) it should be connected to the earthing. Connect it to the clamp terminal signed \perp .
- C. Devices that are to be withdrawn from usage should be sent back to the producer or in case of own utilization do it according to the law.

3. WARRANTY CONDITIONS

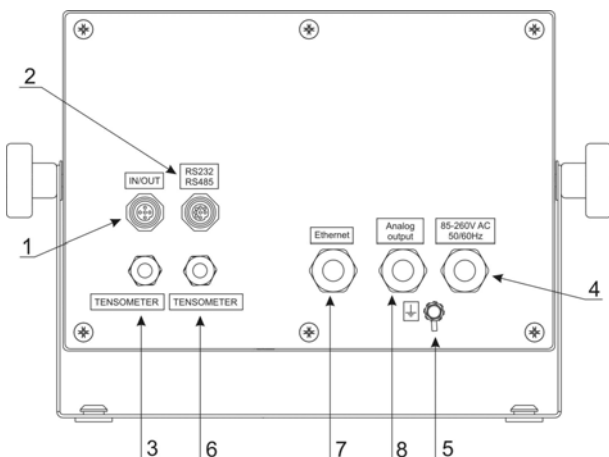
- A. RADWAG is obliged to repair or change those elements that appears to be faulty because of production and construction reason,
- B. Defining defects of unclear origin and outlining methods of elimination can be settled only in participation of a user and the manufacturer representatives,
- C. RADWAG does not take any responsibility connected with destructions or losses derives from non-authorized or inappropriate (not adequate to manuals) production or service procedures,
- D. Warranty does not cover:
 - Mechanical failures caused by inappropriate maintenance of the device or failures of thermal or chemical origin or caused by atmospheric discharge, overvoltage in mains or other random event,
 - Inappropriate cleaning.
- E. Loss of warranty appears after:
 - Access by an unauthorized service,
 - Intrusion into mechanical or electronic construction of unauthorized people,
 - Removing or destroying protection stickers.
- F. The detailed warranty conditions one can find in warranty certificate.
- G. Contact with the central authorized service: +48 48 384 88 00 ext. 106 or 107.

4. MAIN DIMENSIONS



Main dimensions of PUE C41H

5. DESCRIPTION OF CONNECTORS



Terminal connectors

- 1 – I/O connectors
- 2 – RS232, RS485 connector
- 3 – Tensometer gland
- 4 – Power supply gland
- 5 – Earthing terminal
- 6 – Additional platform gland (option)
- 7 – Ethernet gland (option)
- 8 – analogue output gland - voltage or current loop (option)

NOTICE

In accordance to the number of mounted modules the number and the placement of glands and connectors can vary. Connectors and glands mentioned in the standard solution appears in every option in the same place regardless of the option.

6. UNPACKING AND MOUNTING

- Take the device out of the package,
- Put the scale on an even stiff ground,
- Level the platform using an external or internal level condition indicator. Use levelling feet to do it.




level - OK



level incorrect

7. GETTING STARTED

- Switch off the scale using  – keep pressing it for about 0.5 sec,
- Wait for the test completion,
- Then you will see zero indication and following pictograms displayed:



- zero



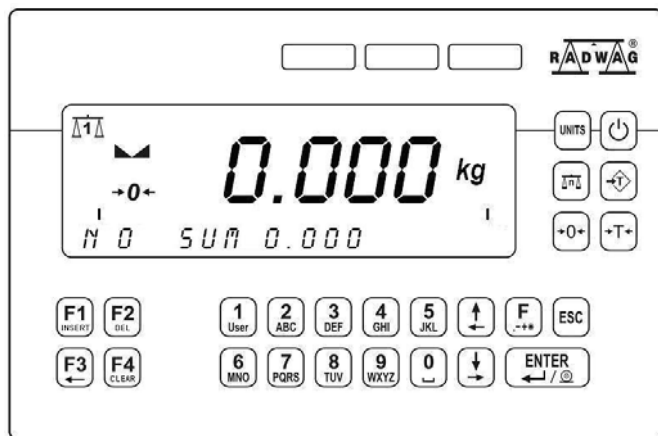
- equilibrium

kg

- weight unit

If the indication is not zero – press zero button.

8. KEYBOARD



9. PICTOGRAMS



















No	Pictogram	Description
1.		Zero indication (Autozero zone)
2.		Equilibrium
3.	kg (g)	Weighing mode
4.		Battery/accumulator
5.	Net	Tare has been introduced
6.	Min	Lower threshold
7.	OK	Proper mass
8.	Max	Upper threshold or TOP mode
9.		Counting pcs
10.	%	Weighings in percents
11.		Animals weighings
12.		Dosing/filling
13.		Bargraph
14.		First platform
15.		Second platform
16.		Second range of weightings'
17.		Establishing communication with a computer in the interactive mode

9.1. Battery charge indication

pictogram is situated in the upper right corner informed about the discharge level or charging process:

- pictogram blinks: accumulator damaged or no accumulator,
- pictogram displayed continuously: it is charge between 70% and 100%,
- pictogram displayed continuously: it is charge between 30% and 70%,
- pictogram displayed continuously: it is discharge (less than 30%), connect to the mains to charge,
- Internal elements of pictograms are displayed in sequence: charging.

10. FUCTIONS OF KEYS

Keys	Description
	Turning on/off the scale
	Toggling between weight units
	Changing active platform
	Inscribing tare value
	Zeroing
	Tarring
	Function key (entering the menu)
	Leaving a function without saving or reaching a higher level of the menu
	Printing out the result or confirming some entered data
	Selection / viewing of articles from the assortment database
	Selection purpose variables
	N/A
	N/A
	Work mode selection
	Log out
	Inscribing a batch number (6 characters)
	Inscribing thresholds (MIN, MAX)
	Statistics overview

Notice:

After pressing **-F-** functions of keys change while in the menu.
The way of using them is described farther.

11. MENU - PARAMETERS

11.1. Overview of parameters

The menu has been divided into **10** basic groups. Each group has its individual name starting with the capital letter **P**. Names of groups and their contents are shown below.

PARAMETERS

P 1 SCALE PARAMETERS

P 1.1 PLATFORM 1 PAR.

P 1.1.1 FITER		AVERAGE
P 1.1.2 MED. FILTER		YES
P 1.1.3 LO THRESH.		20 d
P 1.1.4 TARE MODE		STDRD
P 1.1.5 START UNIT		kg
P 1.1.6 AUTOZERO		YES

P 1.2 PLATFORM 2 PAR.

P 1.2.1 FITER		AVERAGE
P 1.2.2 MED. FILTER		YES
P 1.2.3 LO THRESH.		20 d
P 1.2.4 TARE MODE		STDRD
P 1.2.5 BASIC UNIT		kg
P 1.2.6 AUTOZERO		YES

P 1.3 FACTORY NO

| 0

P 2 COM PORTS PARAMETERS

P 2.1 RS 485

P 2.1.1 BAUD RATE		9600
P 2.1.2 DATA BITS		8
P 2.1.3 PARITY BIT		NO
P 2.1.4 STOP BITS		1

P 2.2 RS 232 (1)

P 2.2.1 BAUD RATE		9600
P 2.2.2 DATA BITS		8
P 2.2.3 PARITY BIT		NO
P 2.2.4 STOP BITS		1

P 2.3 RS 232 (2)

P 2.3.1 BAUD RATE		9600
P 2.3.2 PARITY BIT		NO

P 2.4 ETHERNET	
P 2.4.1 COMM MODE	SERVER
P 2.4.2 IP ADDRESS	192.168.0.2
P 2.4.3 SUBNET MSK.	255.255.255.0
P 2.4.4 GATEWAY	192.168.0.1
P 2.4.5 LOCAL PORT	4001
P 2.4.6 HOST IP	192.168.0.3
P 2.4.7 HOST PORT	2000
P 2.4.8 TIMEOUT	60
P 3 DEVICES	
P 3.1 COMPUTER	
P 3.1.1 COMP. PORT	NO
P 3.1.2 ADDRESS	1
P 3.1.3 COMP. PRINT	NONE
P 3.1.4 BASIC TRS.	YES
P 3.2 PRINTER	
P 3.2.1 PRINT PORT	NO
P 3.3 BARCODE SCANNER	
P 3.3.1 BARCOD. COM	NO
P 3.3.2 START	0
P 3.3.3 LENGTH	0
P 3.4 TRANSP. CARD READER	
P 3.4.1 READER COM	NO
P 3.5 ADDITIONAL DISPLAY	
P 3.5.1 DISPL. PORT	NO
P 3.5.2 DISPL. TYPE	LCD
P 4 DATE / TIME	
P 4.1 DISPL. TIME	* FUNCTION *
P 4.2 SET TIME	* FUNCTION *
P 4.3 DAT. FORMAT	YY-MM-DD
P 5 PRINTOUTS	
P 5.1 AUTO. PRINT	WHEN STAB
P 5.2 STAB. PRINT	YES
P 5.3 CHECKWEIGHING	NO
P 5.4 PRINTOUT	STANDARD
P 5.5 PRINTOUT 1	* FUNCTION *
P 5.6 PRINTOUT 2	* FUNCTION *
P 5.7 PRINTOUT 3	* FUNCTION *
P 5.8 PRINTOUT 4	* FUNCTION *
P 6 DATABASES	
P 6.1 LOGGING	NO
P 6.2 EDITION	ADMIN
P 6.3 ANON. ACC.	ADMIN
P 6.4 PASS. TYPE	NUM
P 6.5 CODE TYPE	NUM
P 6.6 STATISTICS	GENERAL
P 7 WORK MODES	
P 7.1 MODE ACCES.	
P 7.1.1 WEIGHING	YES
P 7.1.2 TOP	YES
P 7.1.3 COUN. PCS	YES

P 7.1.4	CHECKWEIGH.		YES
P 7.1.5	ANIM. WEIGH.		YES
P 7.1.6	DOSAGE		YES
P 7.2	ANIM. WEIGH		
P 7.2.1	WEIGH. TIME		15
P 7.3	DOSAGE		
P 7.3.1	DOSING NAM.		1
P 7.3.2	DELAY		5
P 7.3.3	CHUTE TIME		5
P 7.3.4	OUTPUT MOD.		1_2
P 7.4	INT. TERM.		
P 7.4.1	TIMEOUT		30
P 8 I/O CONFIG			
P 8.1	EXTERNAL BUTTONS		
P 8.1.1	TARE BUTT.		NO
P 8.1.2	PRINT BUTT.		NO
P 8.1.3	ZERO BUTT.		NO
P 8.1.4	START BUTT.		NO
P 8.1.5	STOP BUTT.		NO
P 8.1.6	EXT. START		NO
P 8.1.7	TERM. BUTT.		NO
P 8.1.8	CHUTE PERM.		NO
P 8.2	OUTPUT CONF.		
P 8.2.1	MIN		NO
P 8.2.2	OK		NO
P 8.2.3	MAX		NO
P 8.2.4	STABLE		NO
P 8.2.5	THRESH 1		NO
P 8.2.6	THRESH 2		NO
P 8.2.7	CHUTE		NO
P 9 OTHER			
P 9.1	LANGUAGE		ENGLISH
P 9.2	DIODES		
P 9.2.1	LED POWER		100%
P 9.2.2	RED DIODES		NON-STAB.
P 9.2.3	GREEN DIOD.		STABLE
P 9.3	POWER SAVE		NO
P 9.4	BACKLIGHT		
P 9.4.1	BL MAINS		YES
P 9.4.2	BL BATTER.		100%
P 9.5	BEEP		YES
P 9.6	SOFT. VER.		WTLT 1.4.4
P 10 USER CALIB.			
P 10.1	PLATF. 1 CALIB		
P 10.1.1	STRT M. ADJ.		
P 10.1.2	CALIBRATION		
P 10.2	PLATF. 2 CALIB		
P 10.2.1	STRT M. ADJ		
P 10.2.2	CALIBRATION		

11.2. Navigating within the menu level

Use keyboard to browse the menu.

11.2.1. Keyboard



Entering the main menu, special characters in the editing field



Moving up (left)



Moving down (right)



Adding records in a database
adding characters in an editing field



Clearing the editing field
Erasing a record in a database
Selecting and editing general purpose variables



START of dosing procedure
START of weighings animals
Deleting characters in editing field



Clearing editing field
deleting database
zeroing statistics



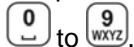
Entering submenus
entering parameters
confirming changes



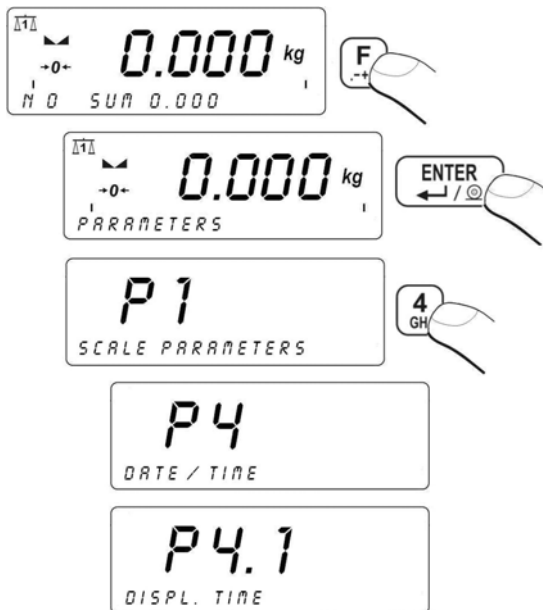
Skipping changes
leaving the menu level

11.2.2. Quick access

It is possible to move quickly within the parameters' menu using





Procedure:



11.3. Return to weighing



Press , until you see **SAVE CHANGES ?**. Then you press:


 – confirms changes or  – skips changes. Then the scale returns to weighing.

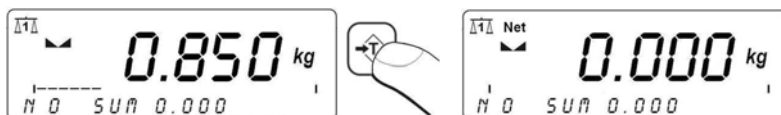
12. WEIGHING

Put a load on the pan. When  displays, you can read the measurement.

12.1. Tarring

In order to determine the net mass put the packaging on the pan.

After stabilising press -  (**Net** pictogram will be displayed in the left upper corner and zero will be indicated).



After placing a load on the weight pan net mass will be shown.

Tarring is possible within the whole range of the scale. After unloading the pan the display shows the tarred value with minus sign.



Notice:


*Tarring cannot be performed when a negative or zero value is being displayed. In such case **Err3** appears on the display.*

12.2. Inscribing tare value

You can also inscribe a tare value:

Procedure:


While in weighings mode:

- Press ,
- In the lower line you will see an editing field:



- Inscribe the tare value:



- Press ,
- The scale return to weighings mode The inscribed tare value can be seen on the display with „-“ sign.

Tare can be inscribed anytime in weighings mode.

12.3. Zeroing

To **ZERO** the scale press: .

The scale will display zero and following pictograms: $\rightarrow 0 \leftarrow$ and .

Zeroing is only possible within the scope of $\pm 2\%$ of full scale.

While zeroing outside the scope of $\pm 2\%$ you will see **Err2**.

Zeroing is possible only in stable state.

NOTICE:

*Zeroing is possible only within $\pm 2\%$ of full range around zero. If the zeroed value is beyond the interval of $\pm 2\%$, **Err2** is displayed.*

12.4. Weighings in two ranges

Switching between the **I range** and the **II range** happens automatically (exceeding Max of the **I range**).

Weighings in the second range is signalled by a pictogram in the top left corner of the display.

Then weighings is done with the accuracy of the **II range** to the moment of returning to zero (autozero range $\rightarrow 0 \leftarrow$) where the scale switches back to the **I range**.



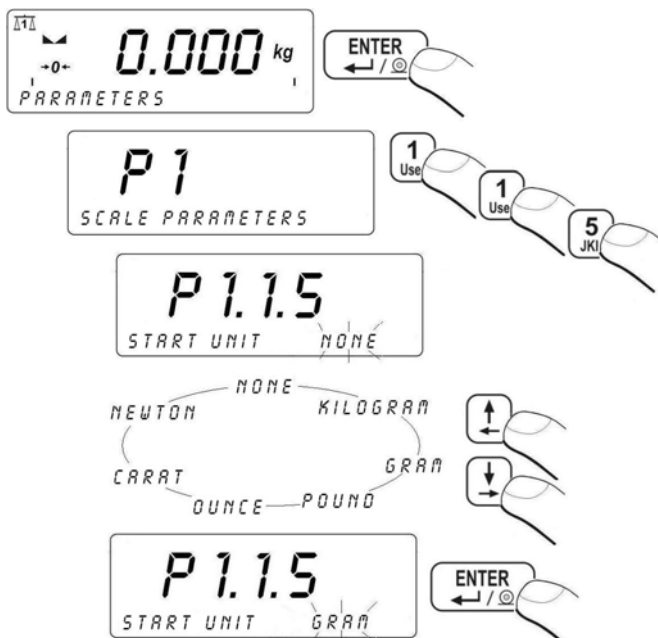
12.5. Toggling between weight units

12.5.1. Selection of basic unit

This function sets the unit that will be set after powering on.

Procedure:

- While In weighings mode press **F** and then:



Selection:

- When the main unit is [kg], users can select among: [kg, lb, oz, ct, N, g] , for verified scales [lb, oz, N] are not accessible;
- When the main unit is [g], users can select among: [g, kg, lb, oz, ct, N] , for verified scales [lb, oz, N] are not accessible.

12.5.2. Toggling between weight units

Press the **Units** key to toggle between weight units.




Accessible units:

- When [kg] is the basic unit, users can toggle between: [kg, lb, oz, ct, N, g]. For verified scales [lb, oz, N] are not accessible;
- When [g], is the basic unit, users can toggle between: [g, kg, lb, oz, ct, N] For verified scales [lb, oz, N] are not accessible.

Notice:

The terminal always starts working with the main (calibration) unit.

12.6. Switching between platforms

If a scale is equipped with two platforms press  to change the platform. The active platform is signalled by pictograms in the top left corner of the display.



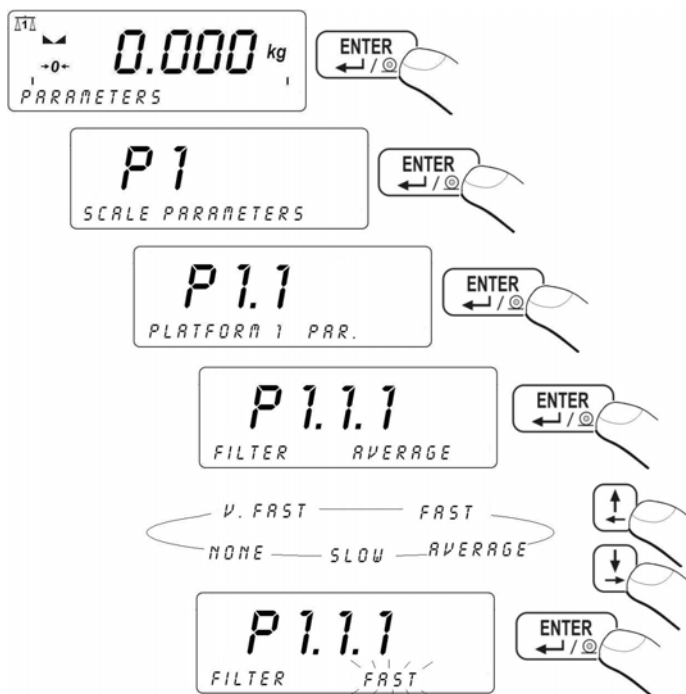
13. MAIN PARAMETERS

Users can adjust the scale to external ambient conditions (filtering level) or particular needs (autozero operation, tare memory). This parameters are present in **<P1 SCALE PARAMETERS>**.

13.1. Filtering level

Procedure:

- While in weighings mode press **F** and then:



Return to weighing:

See 11.3.

NOTICE:

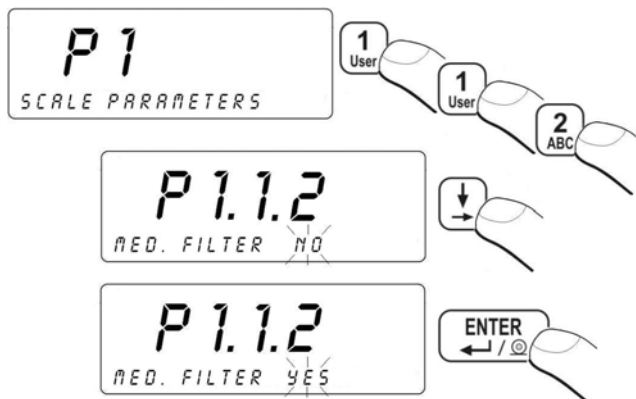
The higher filtering level the longer stabilization time.

13.2. Median filter

This filter eliminates short mechanical shocks.

Procedure:

- Enter <P1 SCALE PARAMETERS> and then:



MED. FILTER NO - filter disabled
MED. FILTER YES - filter enabled

Return to weighing:

See 11.3.

13.3. Minimal mass parameter

Parameter **PROG LO** is related to following functions:

- automatic tare,
- automatic operation,
- weighing animals.

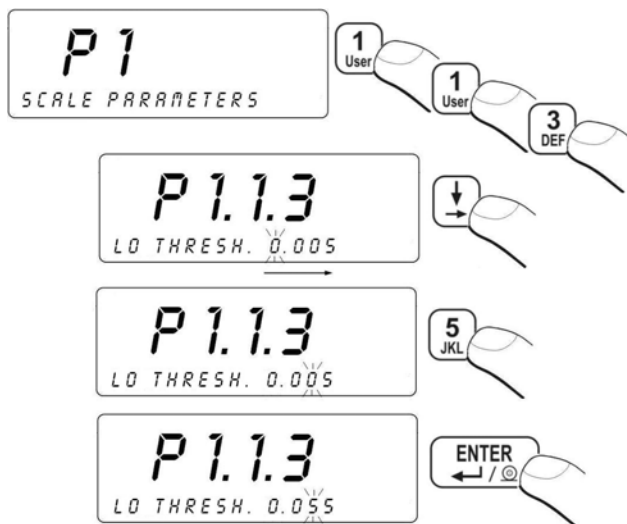
The next automatic tarring can be performed after the indication reaches the gross value below **LO THRESH**.

For automatic weighing the next weighings can be performed after the indication reaches the net value below **LO THRESH**.

The procedure of weighing animals will start after the gross animal mass is greater than **LO THRESH**.

Procedure:

- Enter **<P1 SCALE PARAMETERS>** according to 11.2. and then:



Return to weighing:

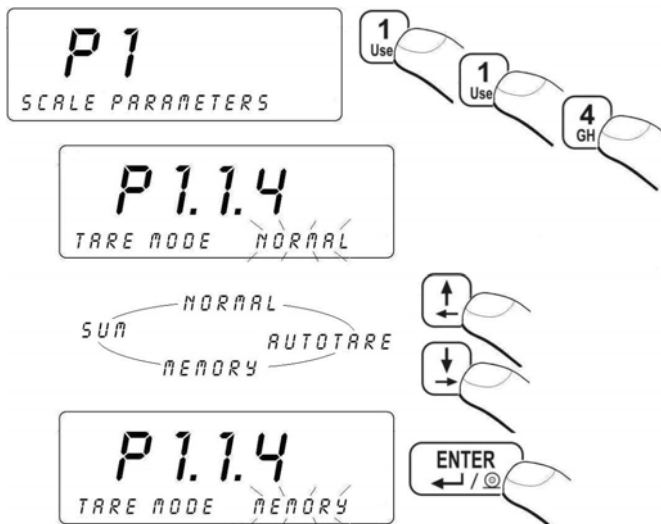
See 11.3.

13.4. Tare function

This parameter allows to set appropriate parameters for tarring.

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:






- | | |
|---------------|---|
| AUTO | – disable automatic tare (the mode is remembered after restart); |
| NORMAL | – tarring by pressing → T ←; |
| MEMORY | – tare memory mode – the last tare value is being kept in a non-volatile memory, Net pictogram is displayed. |
| SUM | – sum of tares – summing up a product tare value with a tare from the database of tare values or with an inscribed one. |

Return to weighing:

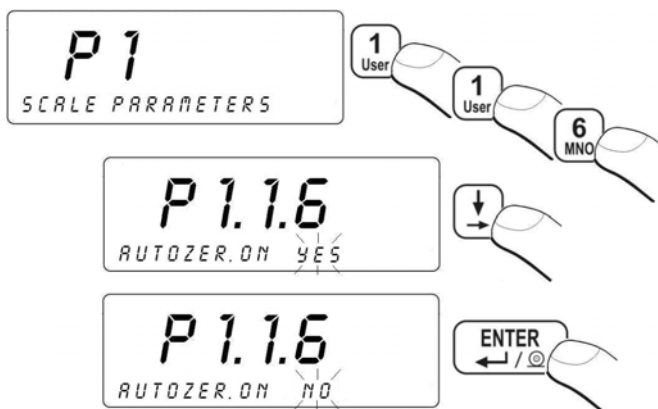
See 11.3.

13.5. Autozero

The autozero function has been implemented in order to assure precise indications. This function controls and corrects „0” indication. While the function is active it compares the results continuously with constant frequency. If two sequential results differ less than the declared value of autozero range, so the scale will be automatically zeroed and the pictograms  and  0  will be displayed. When AUTOZERO is disabled zero is not corrected automatically. However, in particular cases, this function can disrupt the measurement process e.g. slow pouring of liquid or powder on the weighing pan. In this case, it is advisable to disable the autozero function.

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:



Return to weighing:

See 11.3.

14. PORTS PARAMETERS

It is possible to connect external devices (printer, computer) to the ports:

- RS 232 (1)
- RS 232 (2)
- RS 485
- Ethernet

Configuration can be done in: **<P2 COM PORTS PARAMETERS>**.

14.1. RS 232, RS 485 setting

For setting: RS 232, RS 485 use following parameters:

- Baud rate - 2400 - 115200 bit / s
- Data bits - 7, 8
- Stop bit - 1, 1.5, 2
- Parity - NONE, ODD, EVEN

Measurements can be sent via RS in following ways:

- **Manually** – after pressing **ENTER**,
- **Automatically** – after stabilizing over Lo,
- **Continuous** – activation in parameters or via RS,
- **External request** – via RS.

Measurements can be sent:

- **When stable** – the information is sent after stabilization
- **Immediately** – after pressing **PRINT** regardless the equilibrium (only in non-verified scales)

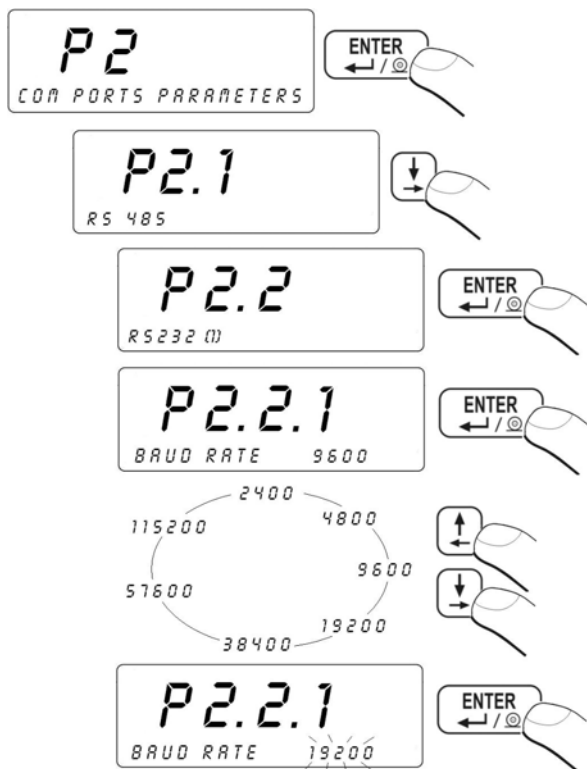
NOTICE:

*There is impossible to set data bits and stop bits for RS 232(2).
They are internally set to 8 bits and 1 stop bit.*

14.1.1. Baud rate of RS 232

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:



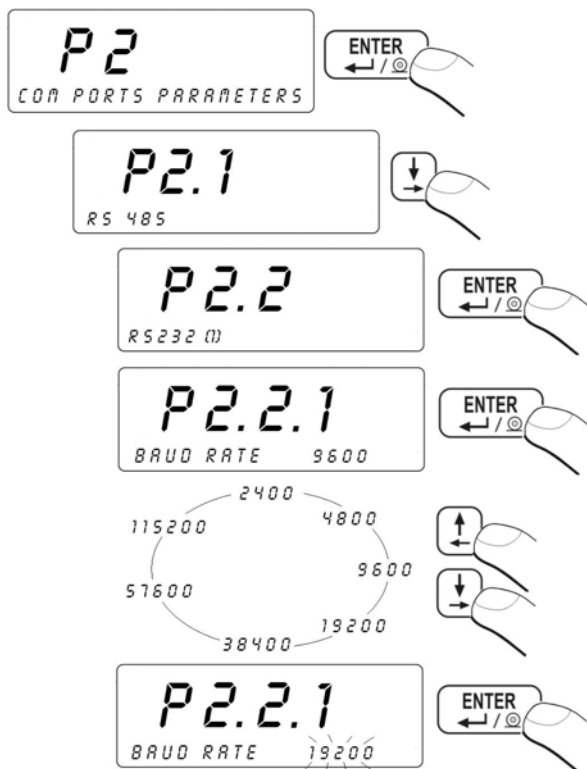
Return to weighing:

See 11.3.

14.1.2. Baud rate of RS 485

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:




Return to weighing:


See 11.3.

14.1.3. RS 232 parameters


Procedure:

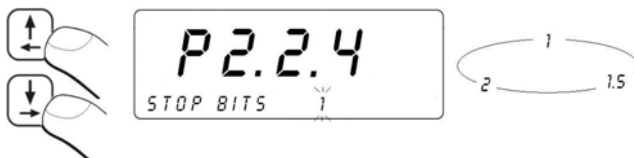
- Enter **<P2.2 RS232 (1)>** and press **<ENTER>**,
- Using  scroll to **<P2.2.2 DATA BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.2.3 PARITY BIT>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.2.4 STOP BITS>** and press **<ENTER>**:




- The selected value confirm with **<ENTER>**,

Return to weighing:

See 11.3.

14.1.4. Setting of RS 485 parameters


Procedure:

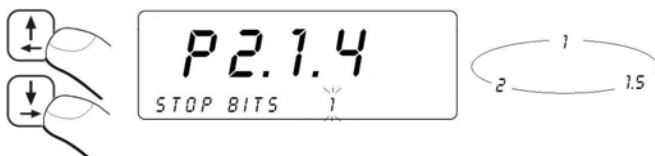
- Enter **<P2.1 RS485>** and press **<ENTER>**,
- Using  go to **<2.1.2 DATA BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.1.3 PARITY BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.1.4 STOP BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,

Return to weighing:

See 11.3.

14.2. ETHERNET setting

ETHERNET can be configured in **<P2.4 ETHERNET>**.

Inventory of parameters:

No	NAME	VALUE	DESCRIPTION
P2.4.1	WORK MODE	SERVER, CLIENT	Mode of Ethernet linking as Server or Client
P2.4.2	IP ADDRESS	192.168.0.2	IP address for Ethernet communication
P2.4.3	SUBNET MASK	255.255.255.0	Subnet mask for Ethernet
P2.4.4	GATEWAY	192.168.0.1	Gateway for Ethernet connection
P2.4.5	LOCAL PORT	4001	Local Port for Ethernet
P2.4.6	HOST IP	192.168.0.3	Host IP for Ethernet
P2.4.7	HOST PORT	2000	Host Port for Ethernet
P2.4.8	TIMEOUT	60	Time (in seconds) after which none-active Ethernet connection is being broken

Return to weighing:

See 11.3.

15. DEVICES

In the **<P3 DEVICES>** group of parameter one can configure external devices connected to the terminal.

15.1. Cooperation with a computer

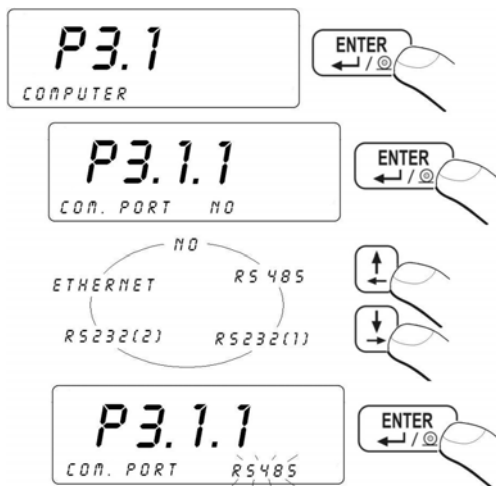
15.1.1. Selecting communication port scale - computer

The computer can be connected to:

- RS 232 (1)
- RS 232 (2)
- RS 485
- Ethernet

Procedure:

Enter **<P3.1 COMPUTER>** and then:



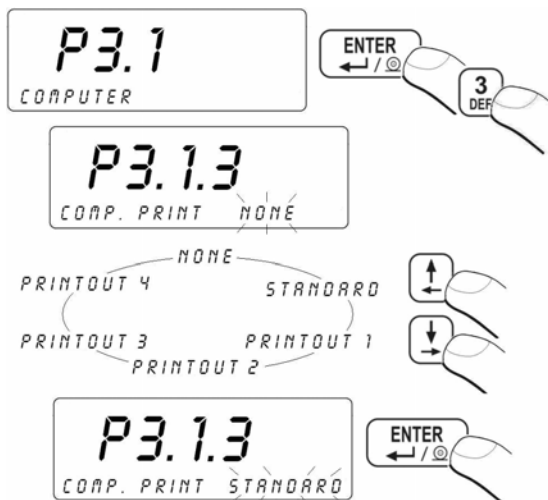
Return to weighing:

See 11.3.

15.1.2. Type of printout scale – computer

Procedure:

- Enter <P3.1 COMPUTER> and then:



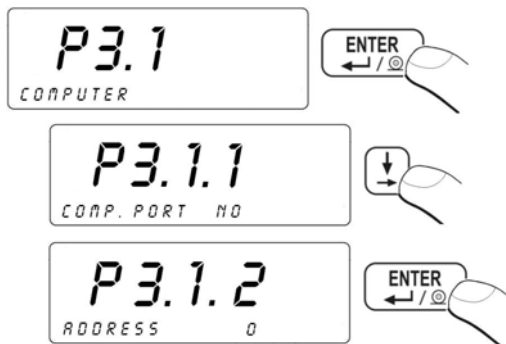
Return to weighing:

See 11.3.

15.1.3. Address setting

Procedure:

- Enter < P3.1 COMPUTER > according to 11.2. and then:



- Inscribe a value (0 to 254) and press **<ENTER>**.

Return to weighing:

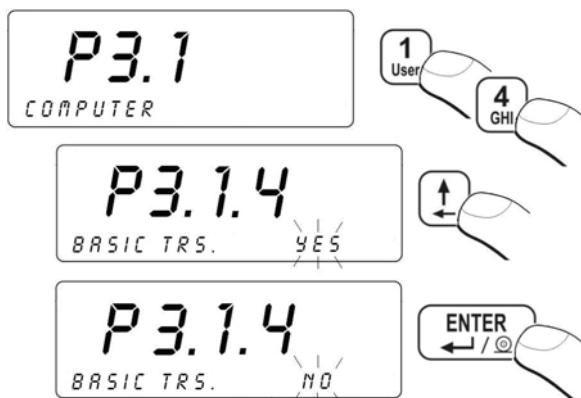
See 11.3.

15.1.4. Order operating of communication protocol

User in parameter **<P3.1.4 BASIC TRS.>** has possibility to set communication protocol designed to communicate between RADWAG scale and external device.

Procedure:

- Enter **< P3.1 COMPUTER >** according to 11.2. and then:



Return to weighing:

See 11.3.

15.2. Cooperation with printers

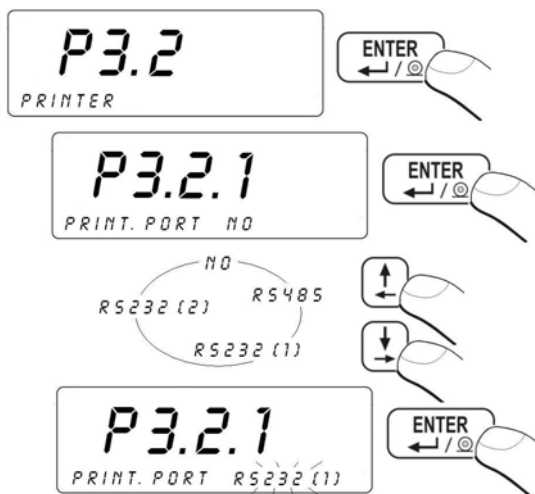
15.2.1. Communication port scale - printer

Following ports can be used:

- RS 232 (1)
- RS 232 (2)
- RS 485

Procedure:

- Enter **<P3.2 PRINTER>** and then:



Return to weighing:

See 11.3.

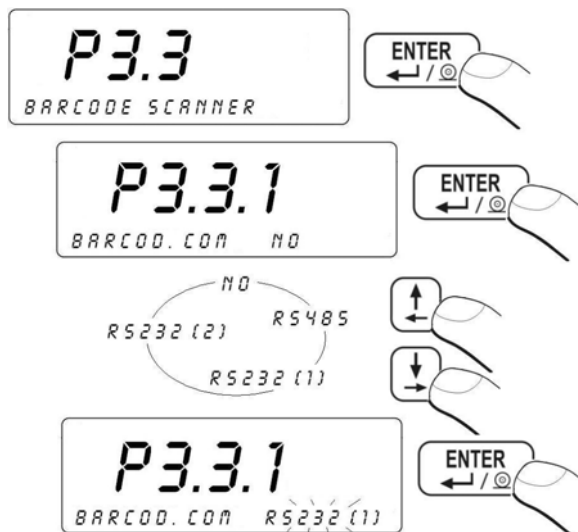
15.3. Cooperation with a barcode scanner

The scale gives possibility to cooperate with barcode scanners. It is used for quick search of database of assortment.

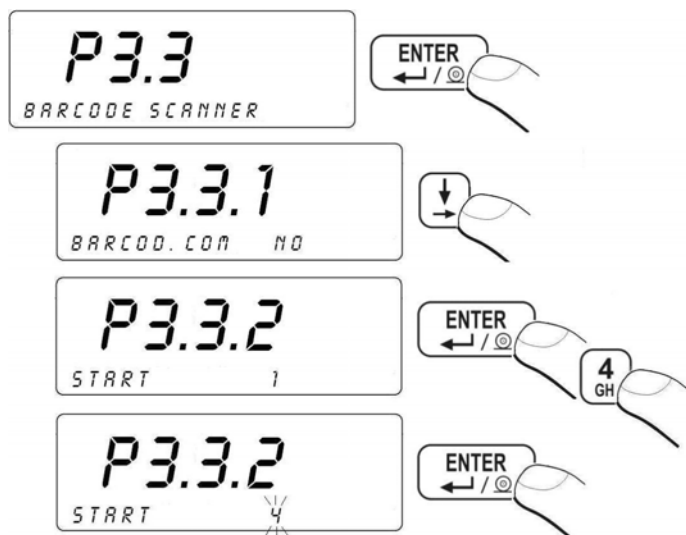
Procedure:

- Enter **<P3.3 BARCODE SCAN.>**,

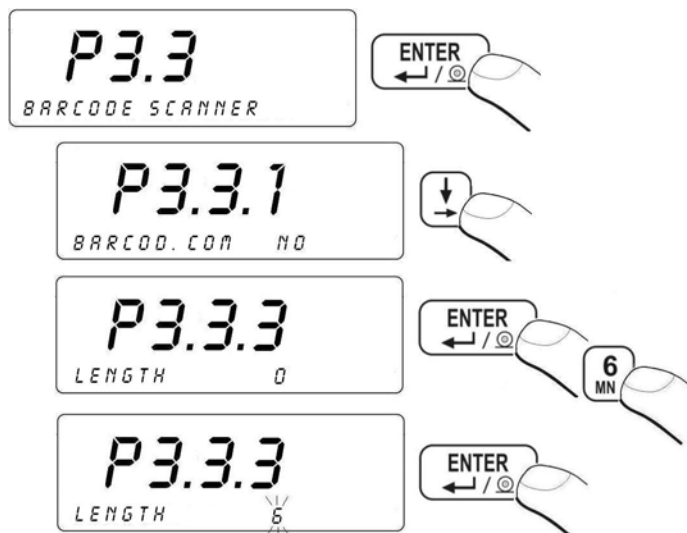
- Select a communication port for the scanner:



- Set **START** parameter- first significant character that is valid for searching string:



- Set parameter **LENGTH** – number of significant characters considered in searching:



Return to weighing:

See 11.3.

NOTICE:

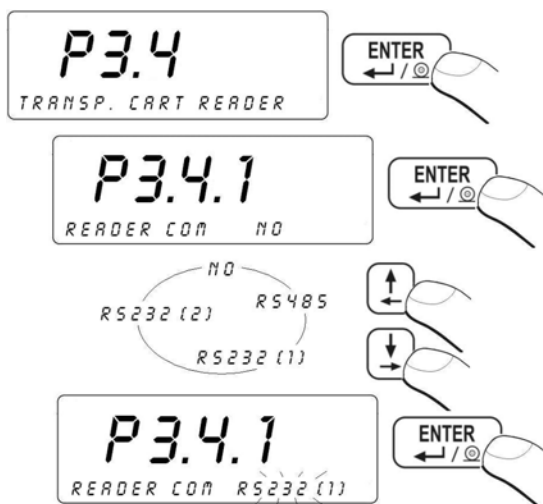
In <P2 COM PORT PARAMETERS> set the baud rate for the one that requires the barcode scanner (default 9600b/s). Additional information can be found in the appendix A.

15.4. Cooperation with a transponder card reader

In case of activating the logging option (submenu <P6.1 LOG IN>), operators have to log in after turning on the scale. Logging can be done:

- Inscribing a password using the scale keyboard,
- Using transponder cards to log in.

Select a port number in <P3.4 TRANSP. CARD READER>:



Return to weighing

See 11.3.

15.5. Cooperation with additional display

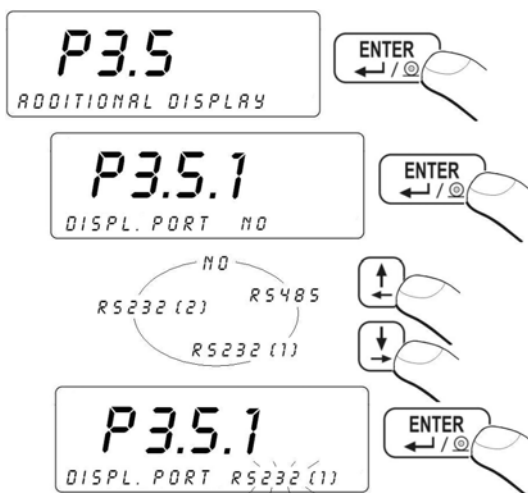
15.5.1. Selecting of communication port scale – additional display

Additional displays can be connected to:

- RS 232 (1)
- RS 232 (2)
- RS 485

Procedure:

- Enter **< P3.5 ADDITIONAL DISPLAY >** according to 11.2. and then:

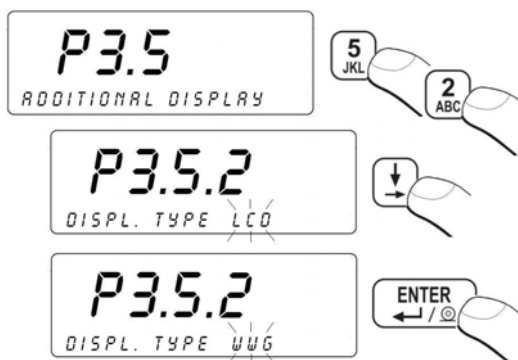


Return to weighing:
See 11.3.

15.5.2. Selecting an additional display type

Procedure:

- Enter **< P3.5 ADDITIONAL DISPLAY >** according to 11.2. and then:



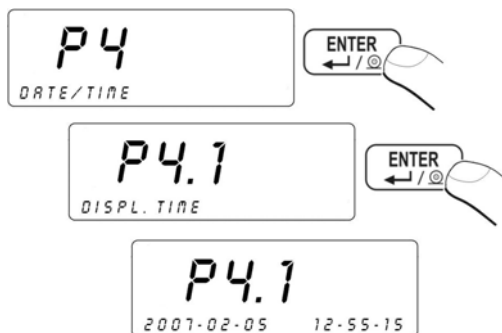
Return to weighing:
See 11.3.

16. DATE / TIME SETTING

Enter **<P4 DATE / TIME>** to set these parameters.

16.1. Time view

Procedure:

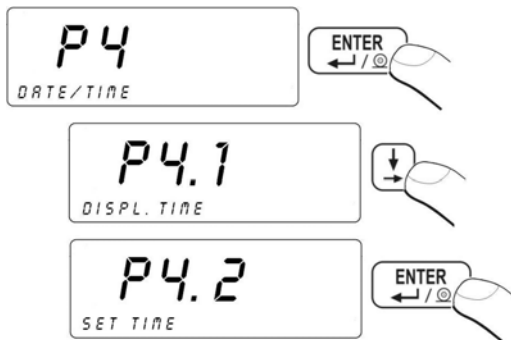


Return to weighing:
See 11.3.

16.2. Time setting

Procedure

- Enter the **DATE / TIME>** and then:



- After pressing **<ENTER>** you will see:



- Enter an appropriate value and confirm it with **<ENTER>**,
- You will have to enter the following variables in sequence:
 - MONTH
 - DAY
 - HOUR
 - MINUTE
- After confirming the last value with **<ENTER>** you will see the current date and time:



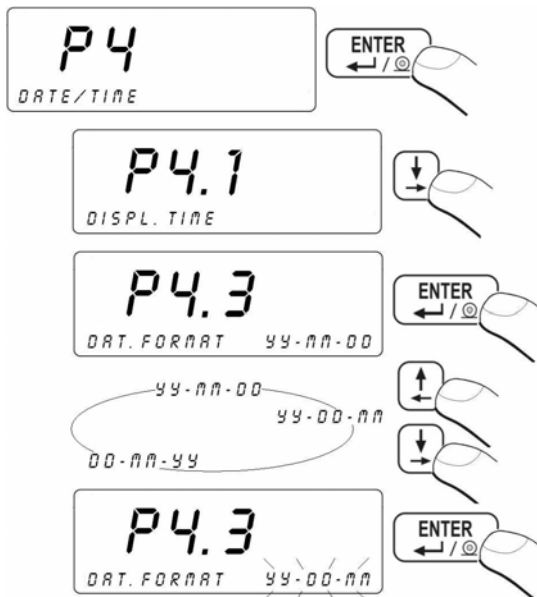
Return to weighing:
See 11.3.

16.3. Date format

Date can be displayed in different format.

Procedure:

- Enter <P4 DATA / TIME> and proceed as follows:



FORMAT DAT	YY - MM - DD	-	year - month - day
FORMAT DAT	YY - DD - MM	-	year - day - month
FORMAT DAT	DD - MM - YY	-	day - month - year

Return to weighing:

See 11.3.

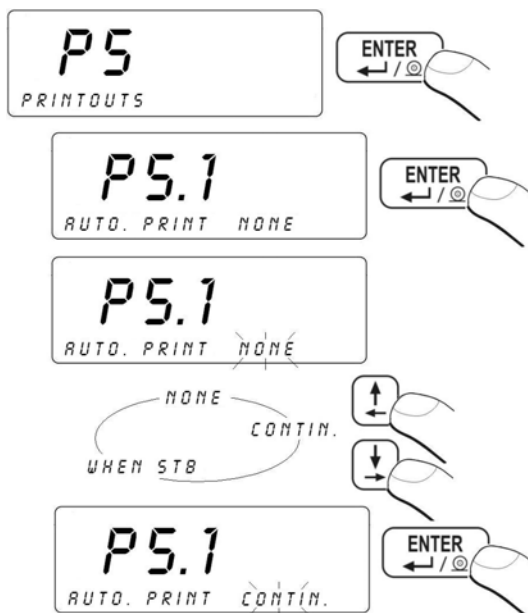
17. PRINTOUTS

17.1. Printout type

Setting the **<P5.1 AUTO. PRINT>** parameter can set a type of printout:

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



AUTO. PRINT	NO	- manual printout
AUTO. PRINT	WHEN STAB	- automatic printout after stabilising
AUTO. PRINT	CONTINUOUS	- continuous printouts
AUTO. PRINT	LAST STAB	- printing the last stable result after taking of a load, before reaching the LO- value

Return to weighing:

See 11.3.

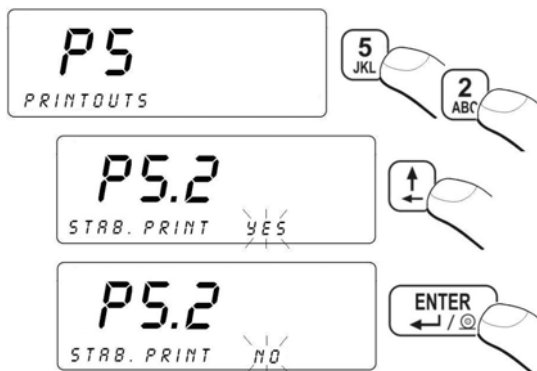
17.2. Printout of stable / unstable data

Enter **<P5.2 STAB. PRINT>**, to set the printout as:

- Stable data,
- Immediate data.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



Return to weighing:

See 11.3.

NOTICE:

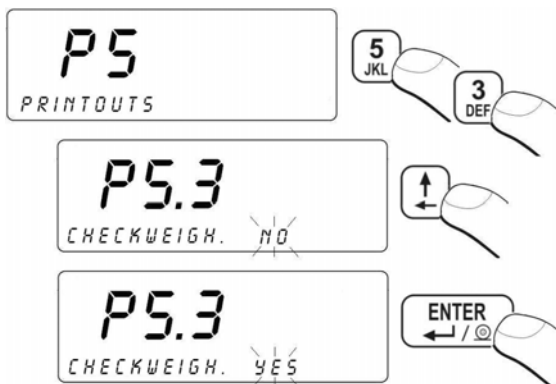
*In case of verified scales **<P5.2 STAB. PRINT>** is not accessible for users.*

17.3. Checkweighing mode

In this mode printout is possible only when the result is between Min, Max thresholds.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



Return to weighing:

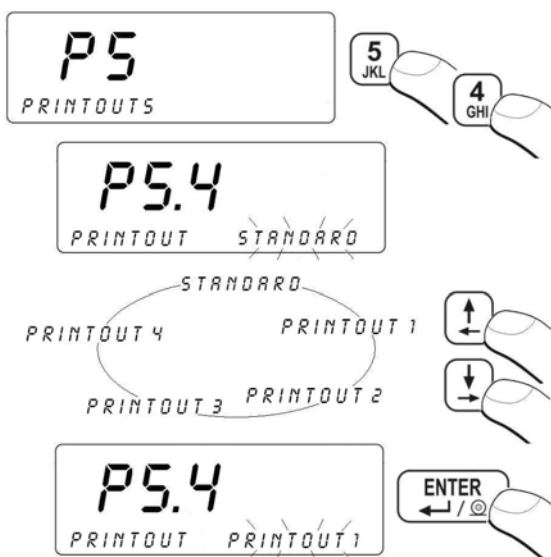
See 11.3.

17.4. Non-standard printouts

Users have possibility to design non-standard printouts in **<P5.3 PRINTOUT>**.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



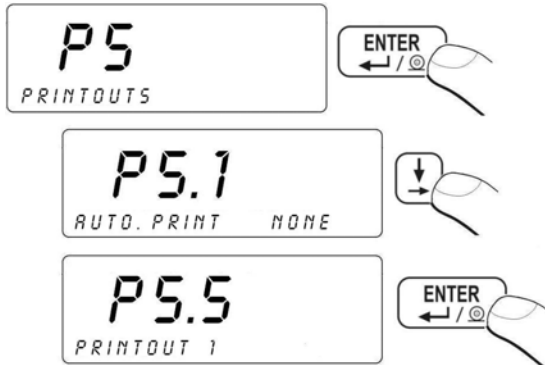
Return to weighing:

See 11.3.

17.5. Designing non-standard printouts

To create a non-standard printout:

- Enter **<P5 PRINTOUTS>** and then:



- After pressing **ENTER**, you will see a cursor. Software is ready to accept your data.

Non-standard printout can comprise:

- Constant texts,
- Variables from different work modes (mass, date, thresholds etc.),
- Non-standard printout design can include max. 320 characters,
- Non-standard printout sent to a printer can include max. 640 characters,
- Up to 4 non-standard printouts can be designed.

Notice:

During designing non-standard printouts all special characters like CRLF, tabulators etc. have to be added.

17.6. Texts in non-standard printouts

A. Variables appearing in all modes which value does not depend on the mode

CODE	DESCRIPTION
000	Mass in a basic unit of the active platform
001	Mass in a current unit of the active platform
002	Date
003	Time
004	Date and time
005	Calibration unit
006	Current unit
007	Min threshold (for checkweighing)
008	Max threshold (for checkweighing)
009	Min threshold (for checkweighing) 7 digits
010	Max threshold (for checkweighing) 7 digits
011	Net mass in the calibration unit
012	Gross mass in the calibration unit
013	Display result in a present unit
014	Tare in calibration unit
015	Statistics – ordinal number
016	Statistics – sum in the calibration unit
017	Statistics – average value in the calibration unit
018	Statistics – minimal value in the calibration unit
019	Statistics – maximal value in the calibration unit
020	Statistics – unit
021	Single pcs mass
022	Standard (nominal) mass in Checkweighing
023	Platform number
024	Operator name
025	Operator code
038	Article name (assortment)
039	Article code (assortment)
040	Article EAN code (assortment)
042	Minimal mass of article (assortment)
043	Maximal mass of article (assortment)
044	Article tare value (assortment)

056	Net mass (lb)
058	Number of digits after the point (calibration unit)
059	Number of digits after the point (current unit)
060	Net mass in EAN 13 (6-character code)
061	Net mass in EAN 13 (7-character code)
064	Net mass in EAN 128
067	Net mass (lb) in EAN 128
068	Gross mass EAN 128
070	Date in EAN 128
127	Difference of tare values (a product tare value subtracted from present tare value)
128	Batch number (6 characters)

Code format:

- %XXX** - sending to a printer a variable **XXX** value
(see the upper table)
- *XXXYY** - sending to a printer **YY** (declared) characters of **XXX**
variable value justified to the left.

Notice:

*Every non-standard printout should be terminated with **␣** character.*

B. Variables for printing out weighings from the database

073	Weighing net mass
075	Weight unit
076	Weighing date
077	Weighing time
078	Operator code
079	Assortment code
080	Contractor code
083	Number of series
084	Platform number

This program includes a standard pattern of printouts from the database (pattern name: ***WG01***), with following variables:

- Net mass of weighing,
- Date,
- Time.

Notice:

Remember that the name of a new printout design should have the following pattern: ***WGXX***, where: **XX** – subsequent number of printout.

C. Variables for printouts of reports from weighings

087	Sum of weighings
088	Weight unit
089	Number of weighings
090	Start date
091	End date
092	Operator code
093	Assortment code
094	Contractor code
097	Series number
098	Type of weighings (%, pcs, kg etc.)
099	Platform number

The program includes 4 patterns of reports from weighings. ***RP02*** is the English equivalent of ***RP01*** and ***RP04*** is an English equivalent of ***RP03***:

Name	Comprised variables
RP01	Sum of weighings Number of weighings Start date End date
RP03	Operator code Assortment code Contractor code Sum of weighings Number of weighings Start date End date

Notice:

1. Remember that the name of a new printout design should have the following pattern: ***RPXX***, where: **XX** – subsequent number of printout.
2. Standard software do not include a database of contractors. That is why the printout ***RP03*** substitutes „Contractor code” with dashes **< ---- >**.

D. Special characters that can be used in non-standard printouts

\\	Single character - „\”
\c	CRLF
\r	CR
\n	LF
\t	Tabulator
\0	End of printout

Example:

ZMP „RADWAG”

Date:

Time:

Mass:

Signature:.....

The inscribed data for :

ZMP_“RADWAG”\C\TDATA:%002\C\TGODZINA:%
003\C\TMASS:%000\C\C\T\TSignature:.....\
C\0

18. DATABASES

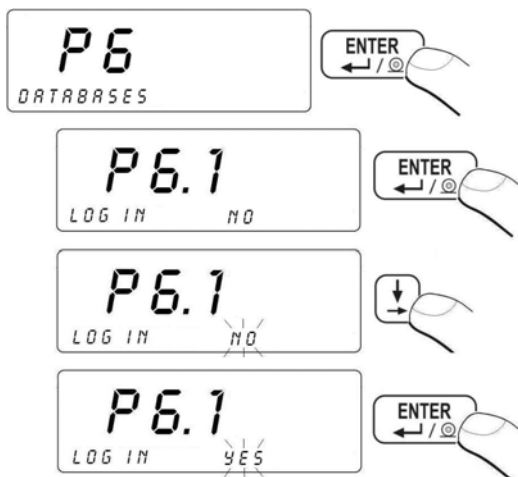
18.1. Logging in

In case of activating of logging procedure (submenu **<P6.1 LOG IN>**), an operator after switching on has to perform a logging procedure which consists in inscribing a password.

Operators can also use a transponder cards for this procedure provided the terminal is equipped in a transponder card reader (see 15.4).

Procedure:



- Enter **<P6 DATABASES>** and then:

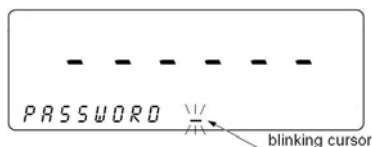


Return to weighing:

See 11.3.

Users can log in even if this procedure is disabled at the start:

- Turn on the device ,
- Press  during a display test,
- Program will show the following window:



Notice:

In case there are no data in the operators' database press **ESC** to skip the logging procedure and add at least one operator with the highest level access. If no ADMINISTRATORS are defined there will be no access to some functions designated only for administrators.

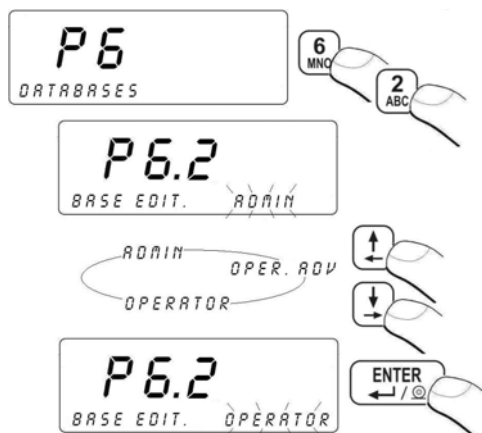
18.2. Access level

18.2.1. Access level to edition of databases

Any administrator is able to set one of three levels of edition of databases: administrator, advanced operator or operator.

Procedure:

- Enter **<P6 DATABASES>** and then:



Return to weighing:

See 11.3.

Notice:

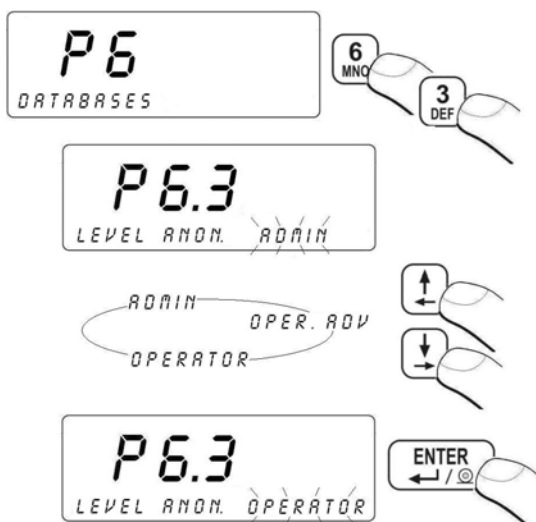
This setting is valid although standard logging is disabled.

18.2.2. Access level for disabled logging procedure

The scale program gives possibility to set an access level in case of disabling logging procedure.

Procedure:

- Enter **<P6 DATABASES>** and then:



Return to weighing:

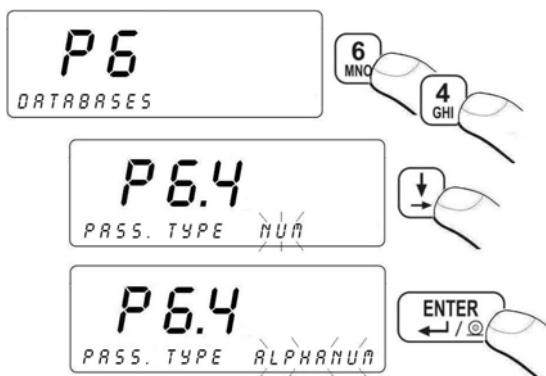
See 11.3.

18.3. Password type

It is possible to set the password type to inscribe.

Procedure:

- Enter **<P6 DATABASE>** and then:



- PASS. TYPE NUM** - only digits **0** to **9**
PASS. TYPE ALPHANUM - alphanumeric password

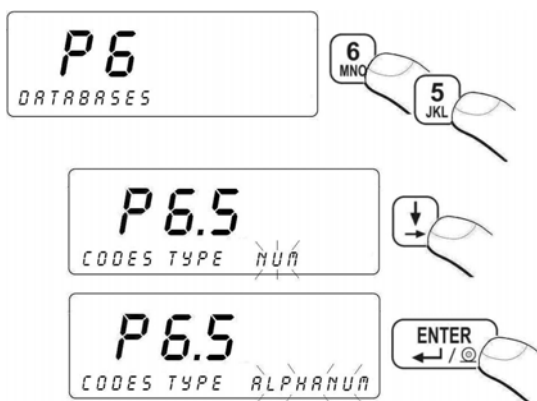
Return to weighing:
 See 11.3.

18.4. Type of codes

There is possible to select a type of codes. You can set this in database settings.

Procedure:

- Enter **<P6 DATABASES>** and then:

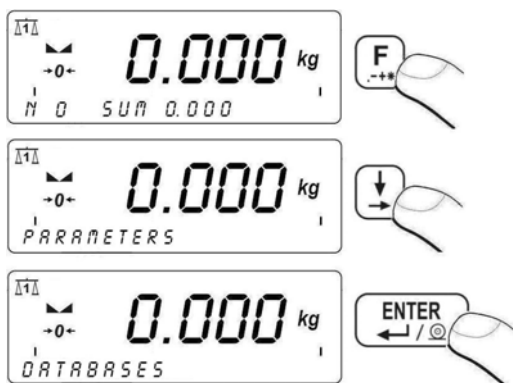


CODES TYPE	NUM	- only digits 0 to 9 ,
CODES TYPE	ALPHANUM	- alphanumeric

Return to weighing:
See 11.3.

18.5. Access to edition of databases

Procedure:



Return to weighing:
See 11.3.

Notice:

Users can access different things in the menu according to their Access levels. It also concerns an access to databases.

18.6. Quick searching in databases

Users can search databases using different criteria:

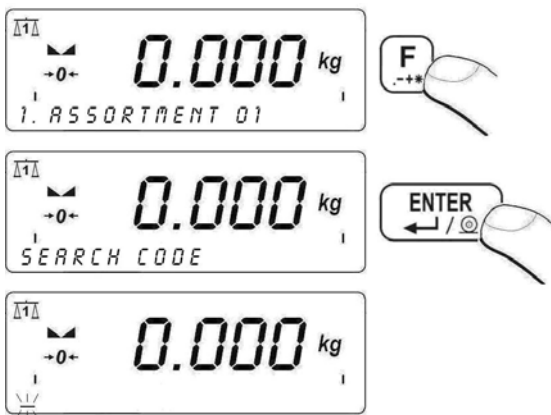
- Code,
- Name,
- Record number.


This procedure is applicable for operators and assortment.

18.6.1. Quick code search

Procedure:

While in any work mode press  (select / view products in the assortment database) and then:



- Inscribe the code you search and then press .
- The program displays the record you search in the bottom line.

Notice:

If the search result is not successful the <NO RECORD> message in the bottom line is displayed for 1 second and then software returns to displaying the current record.

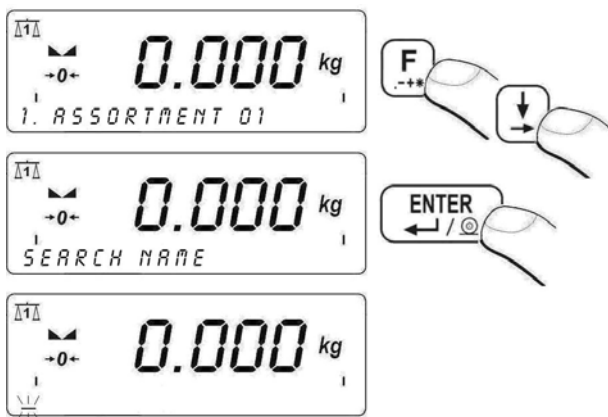
Return to weighing:


See 11.3.

18.6.2. Quick name search

Procedure:

While in any work mode press  (select / view products in the assortment database) and then:



- Inscribe the name you search and then press .
- The program displays the record you search in the bottom line.

Notice:


*You can inscribe a part of the name to start searching. The program will display the first string it encounters with the same beginning as the inscribed one. If the search result is not successful the **<NO RECORD>** message in the bottom line is displayed for 1 second and then software returns to displaying the current record.*

Return to weighing:

See 11.3.

18.6.3. Quick number search

Procedure:

- While in any work mode press  (select / view products in the assortment database),
- Scale program displays the record number one in the bottom line:



- Using numeric keys  to  enter a required record number,
- Scale program displays the record in the bottom line:

Return to weighing:

See 11.3.

18.7. Users' database

The database of operators can hold up to 100 records in standard setting of databases.


Defining of operators:

- Enter databases according to 18.5. and then:



- When the database is empty you will see:






- To add a record press ,
- In the lower line you will see the first line for inscribing data.

Fields in an operator record:


NAME	Operator name (40 characters)
CODE	Operator code (6 digits or 6 characters, according to <P6.5 CODES TYPE> , see 18.4)
PASSWORD	Password for logging (8 digits 8 characters, according to <P6.4 PASS. TYPE> , see 18.3)
CARD CODE	Transponder card code (15 digits, see 15.4)
AUTHORIS.	The access level (see 18.2)

You can enter the edition end confirm any data by pressing .




You can select fields using  .

- After defining all fields in a record of operator Press ,
- Then you will see:



- Press  if you want to save,
- You will see a name and a position in the database:



- To delete a record press ,
- To edit a defined record press ,
- To delete all records press .

Return to weighing:

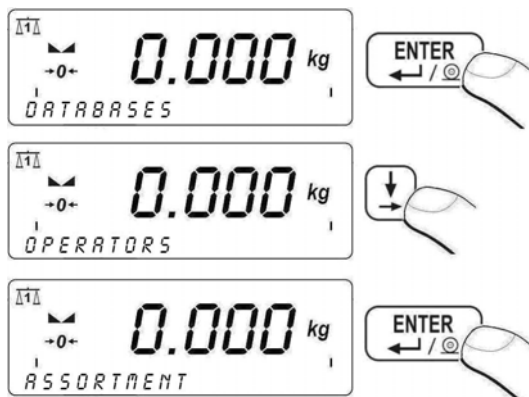
See 11.3.

18.8. Assortment database

The assortment database can comprise up to 3000 records.

Procedure of adding records:

- Enter databases according to 18.5 of this manual:



- In case the database is empty you will see:




- Press **F1** EDIT to add a record,
- You will see the first empty record in editing mode.


Fields in the assortment database:

NAME	Product name (max. 40 characters)
CODE	Product code (7 digits 7 characters <P6.5 CODE TYPE>, see 18.4)
EAN	Constant code that can be used as a barcode (max. 15 digits)
MIN	Minimal mass for checkweighing
MAX	Maximal mass for checkweighing
TARE	Tare value (it is preset automatically after selecting a product)




Entering edition and confirming changes can be made by pressing . Select fields to be changed using   keys.

- After defining all fields press ,
- You will see the following inscription:



- Press  to save changes,
- You will see the products name you have edited:



- To erase the selected record press ,
- To edit the selected record press ,
- To clear the database press .

Return to weighing:

See 11.3.

18.9. Weighings database

Every result sent from the scale to a printer is also saved in the database of weighings. There is possible to save up to 40 000 records in database in standard setting.

Procedure of editing of weighings:

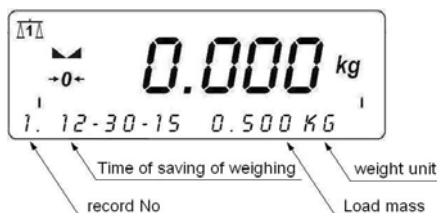
- Enter the database according to 18.5 and then:



- When the database is empty you will see:



- In case when the database is not empty, you will see the first record (date, mass, unit):



- To delete the selected record press **F2** DEL.
- To delete all records press **F4** CLEAR.
- To print the selected record press **ENTER** (left arrow / circle with dot).

Notice:

1. Single record can be deleted only when first in the database (the oldest record).
2. The printout pattern and variables for designing non-standard printouts are described in ch. 17.6 of this manual.


Return to weighing:

See 11.3.













18.10. Database of values of tares

It is possible to hold up to 100 tare values (for every platform).

Procedure:

- Press  twice in any work mode,
- In case when there is no record you will see the following window:



- To enter a tare value ,
- Using numerical keys  to  enter a value and confirm with ,
- Press  one more time to return to the weighing mode. You will see the entered value with „-“.
- To delete a selected record press ,
- To edit a selected record press ,
- To delete all records press .
- You can browse in the database using   or by inscribing a record number using  to .

Notice:


*If users confirm a tare value greater than the maximal value (full scale) you will see the following inscription: **<TOO HIGH VALUE>**.*

Return to weighing:

See 11.3.

18.11. General purpose variables

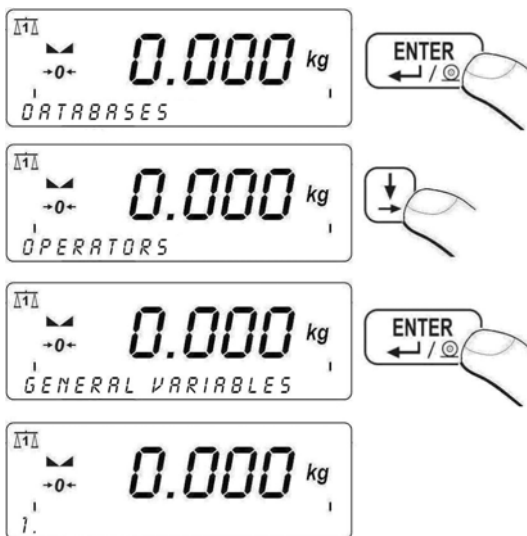
You can inscribe any text to be memorized for printouts.

You can view or edit them from the level of databases in the menu or using a quick access method by pressing  from any work mode (apart from dosing).

18.11.1. Editing general purpose variables

Procedure:

- Enter databases according to 18.5 and then:



- To add or modify a record (inscribing characters like in mobile phones) press **F3**,
- To add or modify a record (inscribing only digits **0** to **9**) press **F4**,
- To clear a field press **F4** CLEAR when you are in,
- Using appropriate keys inscribe a variable and confirm it by pressing **ENTER** ← / ○,
- You can browse the variables using **↓** **↑** or by inscribing a variable position number **0** to **9** WXYZ to get a quick access.

Return to weighing:

See 11.3.

18.11.2. General purpose variables in printouts

The database of general purpose variables can comprise up to 100 records. Each record can hold up to 320 characters. Each variable has prescribed a code number formatted as **% XXX** or *** XXX YY**:

% XXX - inserting to the printer buffer a dedicated variable, where:

XXX – is between 801 to 900, which is equivalent to subsequent records in the database (e.g. code 802 is equivalent to the 2nd position in the database).

*** XXX YY** - inserting to the printer buffer a dedicated variable, where **YY** is a declared quantity of characters from a variable **XXX**.

Example:

Zakład Mechaniki Precyzyjnej „RADWAG”

Date:

Time:

Mass:

signature:.....

Where: <Zakład Mechaniki Precyzyjnej „RADWAG”> is a universal variable No 3. After entering non-standard printouts (see 17.6) we design a printout:

```
% 8 0 3 \ C \ T D A T E : % 0 0 2 \ C \ T T I M E : % 0 0 3 \ C \ T M A S S :  
% 0 0 0 \ C \ C \ T \ T S I G N A T U R E : . . . . . \ C \ 0
```

19. REPORTS FROM WEIGHINGS

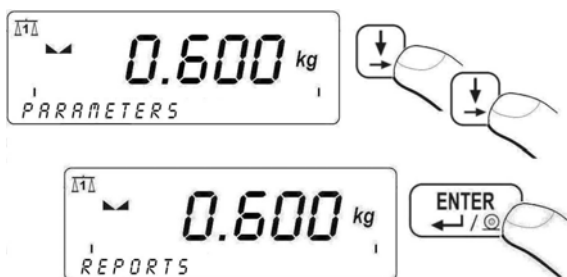
Users can print reports from weighings.

Reports can be filtered according to:

- start date,
- end date,
- operator code,
- assortment code,
- type of weighing,
- weighing platform number,
- batch number.

19.1. Editing reports

While in any work mode press **F** and then:






Return to weighing:

See 11.3.




19.2. Printouts of reports

After entering (see ch. 19.1) you will see the following display:






- To edit variables press ,
 - Confirm changes by pressing ,
 - To filter according to the selected variable press ,
- and you will see the following window:



- Press  to go to the next variable,
- After editing all variables go to the next item **<PRINT REPORT>** by pressing .
- Press , you will see the window:



- Using   select one of four patterns (details in ch.17.6),
- Press  to print out the report.

Return to weighing:

See 11.3.

Notice:

If a user disables filtering according all the variables, the program will print out a report from all the weighings.

20. CONFIGURATION OF EXTERNAL INPUTS / OUTPUTS

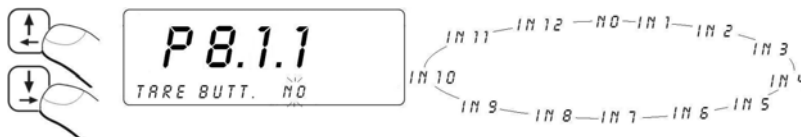
20.1. Configuration of external buttons


Following external buttons can be connected:

TARE BUTT	Tare button
PRINT BUTT	Print button
ZERO BUTT	Zero button
START BUTT	Start button, Start weighing animals button
STOP BUTT	Button for breaking dosing process, Button for breaking weighing animals
EXT. START	Input signal allowing to START dosing
TERM. BUTT.	Terminating of dosing process
CHUTE PERM.	Permission input signal for chute

Procedure:

- To declare a number of input ascribed to the button enter **<P8.1 EXTERNAL BUTTONS>** and then,
- Press **ENTER**,
- You will see **<P8.1.1 TARE B.>**,
- Press **ENTER**:



- Confirm your selection with **<ENTER>**,
- Using  go to the next parameter.

Notice:

You can ascribe all your buttons accordingly. Remember that the standard solution has only 3 inputs.

Return to weighing:

See 11.3.

20.2. Configuration of outputs

Users can configure outputs according to their needs.

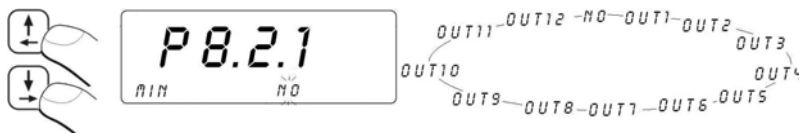
You can declare outputs:


MIN	Mass below the Min threshold
OK	Mass between Min and Max threshold
MAX	Mass over the Max threshold
STABLE	Stable result over the LO threshold
THRESH 1	Threshold of passing from dosing to precise dosing in dosing mode
THRESH 2	Completing dosing process
CHUTE	Chute control

Procedure:

To declare an output number connected with the function, enter **<P8.2 OUTPUT CONF.>** and then:

- Press **ENTER**,
- You will see **<P8.2.1 MIN>**,
- press **ENTER**:



- Confirm the selected value with **<ENTER>**,
- Using  go to the next function.

Notice:

You can ascribe all functions to outputs accordingly. Remember that the standard solution has only 3 reed relay outputs.

Return to weighing:

See 11.3.

21. STATISTICS

21.1. Updating of statistics

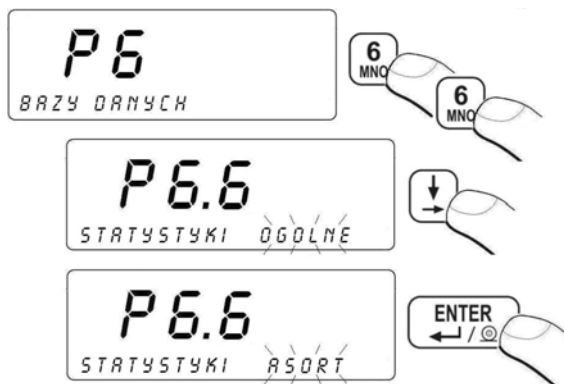
All statistics are updated in real time after every subsequent measurement after putting a load on the pan, reaching equilibrium, and pressing **ENTER**. Number of weighings and sum are shown in the lower line of the display.



Statistics can be calculated globally (does not depend on the selected product) or separately for every product from the assortment database. It can be set in parameters **<P6.6 STATISTICS>**.

Procedure:

- Enter **< P6 DATABASES >** according to 11.2. and then:



STATISTICS GENERAL - global statistics.
STATISTICS ASSORT - statistics for every product.

Return to weighing:



See 11.3.

21.2. Printouts of statistics

Users can print out statistics in any work mode.

Procedure:



Using   users can view the current statistics: **SUM** – total mass of all details, **AVG** – every mass of all details, **MIN** – minimal mass, **MAX** – maximal mass.

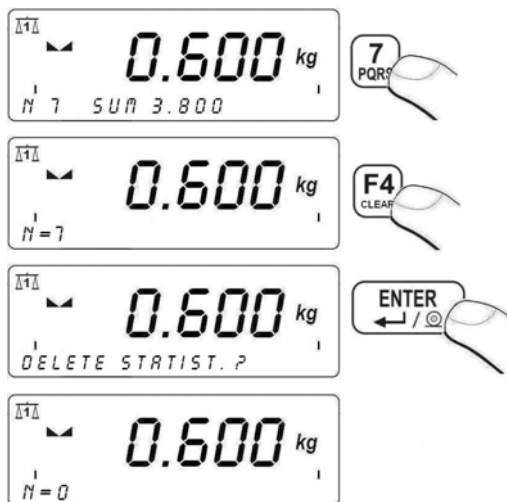
Printout example:

N = 7	- number of weighing
SUM = 3.800 kg	- total mass
AVG = 0.543 kg	- average mass of all loads
MIN = 0.200 kg	- minimal mass
MAX = 1.000 kg	- maximal mass

21.3. Zeroing statistics

Users can delete statistics to start a new series of measurements.

Procedure:



Return to weighing:

See 11.3.

Notice:

When a user changes a work mode all statistics are automatically deleted.

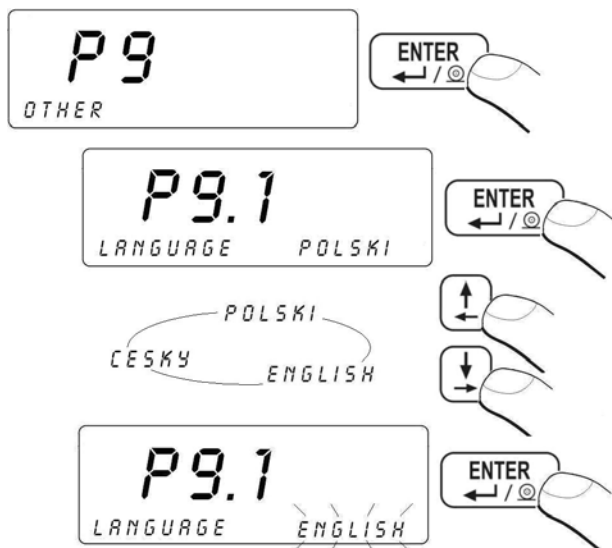
22. OTHER PARAMETERS

Users can set parameters that influence the weighings procedure. There are included in **<P9 OTHER>** e.g. language, backlight, BEEP sound.

22.1. Language setting

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:

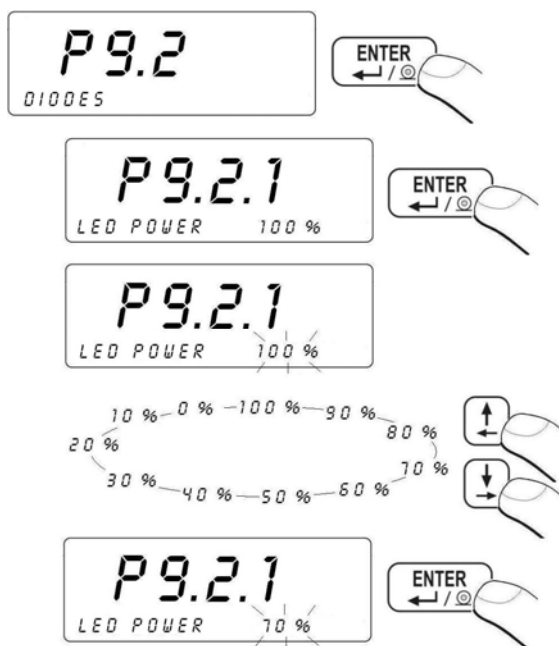
See 11.3.

22.2. DIODES power setting

According to the requirements (e.g. intensity of external light) it is possible to change the light flux from LEDs in the scale of 0% to 100%.

Procedure:

- Enter **<P9.2 DIODES>** and then:



Return to weighing:

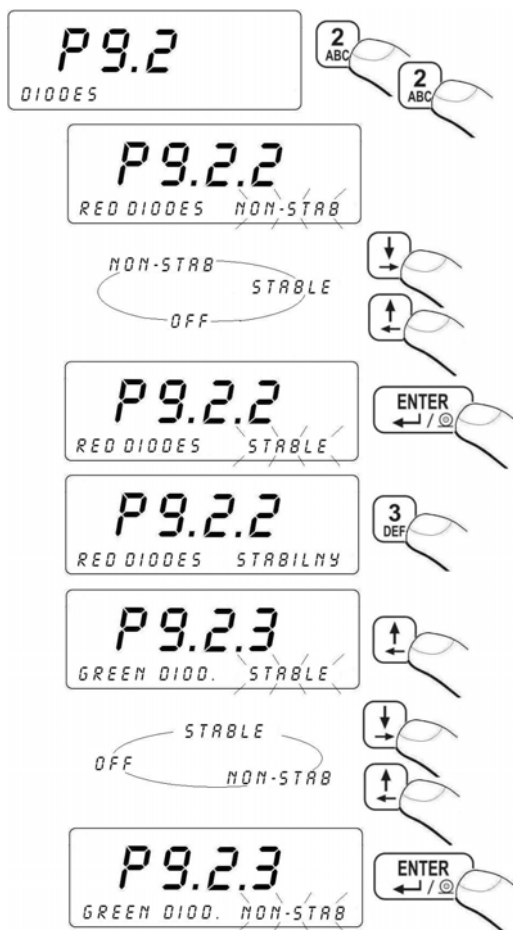
See 11.3.

22.3. Work mode of DIODES

In **<P9.2 DIODES>** users can chose a work mode for LEDs.

Procedure:

- Enter **<P9.2 DIODES>** and then:



- | | |
|----------------------------|--|
| RED LEDS NONSTAB. | - diodes start to lit after exceeding the LO threshold (see 13.3), |
| RED LEDS STABLE | - diodes start to lit after exceeding the LO and reaching equilibrium, |
| RED LEDS OFF | - diodes not work, |
| GREEN LEDS NONSTAB. | - diodes start to lit after exceeding the LO, |
| GREEN LEDS STABLE | - diodes start to lit after exceeding the LO and reaching equilibrium, |
| GREEN LEDS OFF | - diodes not work. |

Return to weighing:
See 11.3.

22.4. Automatic power down

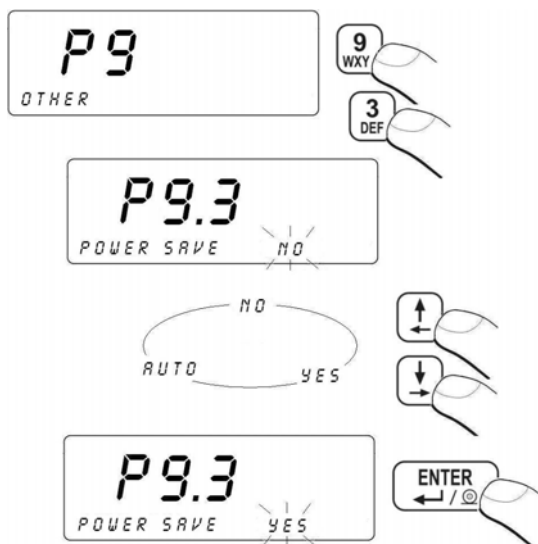
Changes can be made in **<P9.3 POWER SAVE>**. When the **POWER SAVE** function is enabled the device switches off after 5 min. Provided no changes on the pan appeared (no changes on the display).

Function setting	Operation	
	Mains	Accumulator
POWER SAVE = NO	Disabled	Disabled
POWER SAVE = YES	Enabled	Enabled
POWER SAVE = AUTO *	Disabled	Enabled

* power save mode for the internal power supply.

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:
See 11.3.

22.5. Backlight

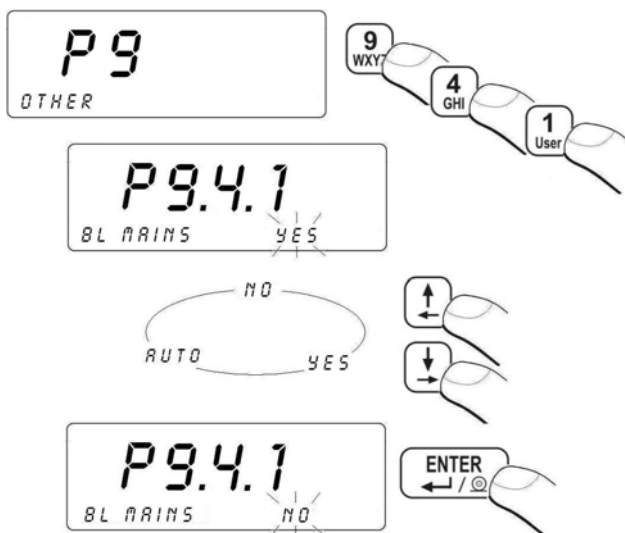
According to the requirements (e.g. intensity of external light) it is possible to:

- Switch on/off or set the backlight operation to AUTO – when supplied from mains,
- Change the backlight intensity in the scale of 0% to 100% - when supplied from an accumulator (lower backlight intensity increases the operation time when supplied from the accumulator).

22.5.1. Backlight – power supply from mains

Procedure:

- Enter **<P9 OTHER>** and then:



- BL MAINS NO** – backlight switched off
BL MAINS YES – backlight switched on
BL MAINS AUTO – backlight switched off automatically

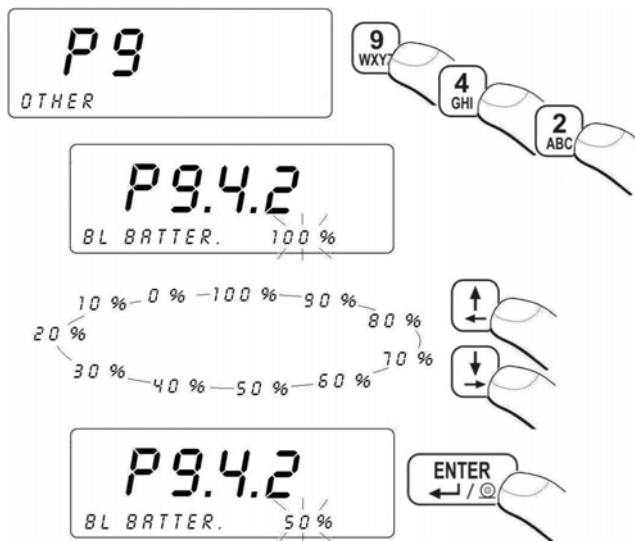
Return to weighing:

See 11.3.

22.5.2. Backlight - power supply from the accumulator

Procedure:

- Enter <P9 OTHER> and then:



Return to weighing:

See 11.3.

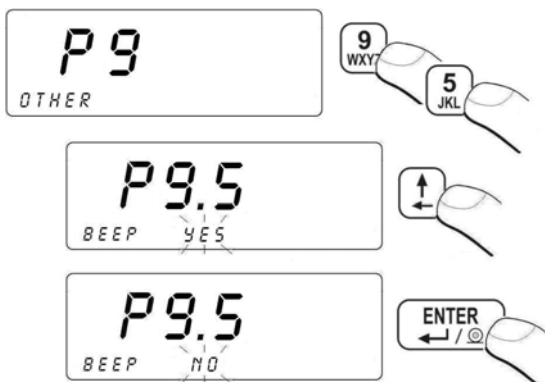
NOTICE:

Backlight operation shortens time between subsequent recharges of the accumulator.

22.6. “Beep” sound – key-press reaction

Procedure:

- Enter the **<P9 OTHER>** and the:



BEEP NO - no “beep” after pressing keys
BEEP YES - “beep” after pressing keys

Return to weighing:

See 11.3.

22.7. Software version view

Users **<P9.6 SOFT. VER.>** can view a software version number.

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:

See 11.3.

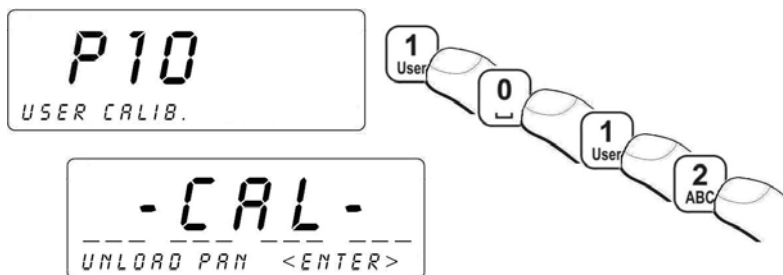
23. SCALE CALIBRATION


Option only for non-verified scale

Scales require to recalculate internal divisions to more suitable ones (e.g. g, kg etc.). In order to do this they require a calibration factor. It is adjusted during the calibration procedure using a mass standard. Calibration should be made when weighing a standard mass shows a different mass value.


23.1. Calibration procedure

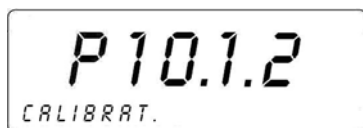
- Enter **<P10 USER CALIB.>** and then:



- Unload the pan,
- Press . During adjusting a start mass you will see: **ADJ. START MASS**, in the bottom line.
- After completing this procedure you will see the following window:



- Place the required mass on the platform 1 then press ,
- During the calibration process you will see: **ADJ. CALIB. FACTOR**, in the bottom line.,
- After the procedure is completed you will see in: **UNLOAD THE PAN** in the bottom line,
- After taking off the calibration weight :



- Return to weighing, saving parameters.

Return to weighing:

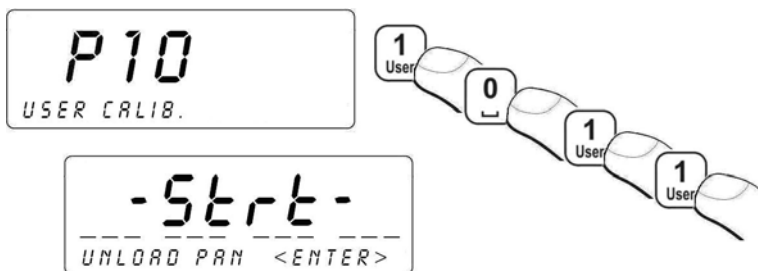
See 11.3.


23.2. Start mass adjustment

It is possible to adjust only a start mass, it helps to correct the start zero when the span does not change.

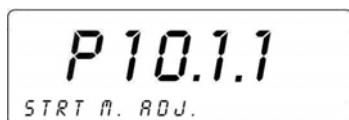
Procedure:

- Enter <P10 KALIBRACJA UZYTK.> and then:



- Unload the scale,
- Press . During adjusting a start mass you will see: **ADJ. START MASS**, in the bottom line.

After completing this procedure the scale will return to the following window:




- Return to weighing, saving parameters.

Return to weighing:

See 11.3.

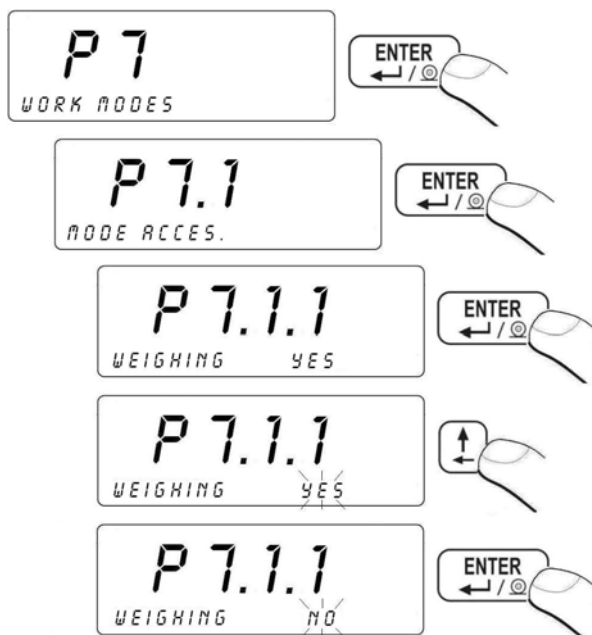
24. WORK MODES

24.1. Accessibility of work modes

In **<P7.1 ACCESSIBILITY>** users can declare work modes that are accessible after pressing .

Procedure:

- Enter **<P7 WORK MODES>** and then:



NO - mode denied
YES - mode accessible

Return to weighing:

See 11.3.

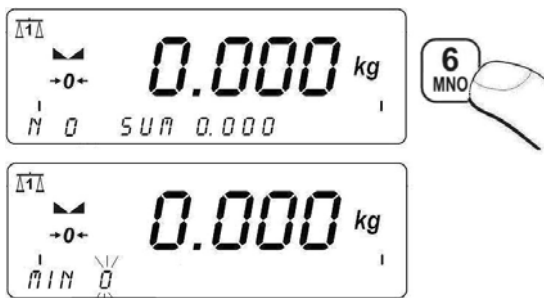
Notice:




This way you can disable/enable all accessible work modes.

24.2. +/- control according to an inscribed standard mass




While in weighing mode users can define (**MIN**, **MAX**).

Procedure:



- Using  to  numerical keys inscribe a **MIN** threshold and confirm with ,
- You will see the following display:



- Using  to  numerical keys inscribe a **MAX** threshold and confirm with ,
- Software returns to **WEIGHING**.

While setting these thresholds following features are important:

- Symbols: **Min**, **OK**, **Max** in the upper line of the display:

load mass greater than the II-nd threshold

load mass between thresholds

load mass lower than the I-st threshold



- Designation of the proper interval (OK) on the bargraph:



- Three **fields of signalling LEDs** over the display:

Left – red – when this field shines the mass is lower than the **Min** threshold;

Middle – green – Designation of the proper interval **OK** between **MIN** and **MAX** thresholds;

Right – red – when this field shines the mass is higher than the **Max** threshold.

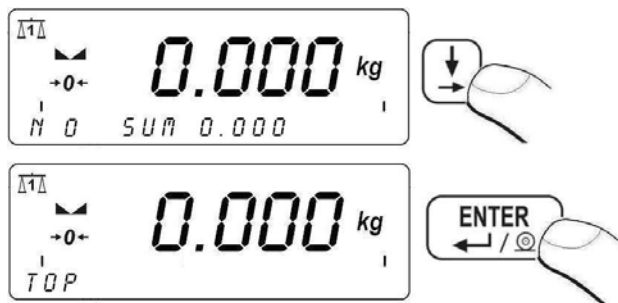
Notice:

Users can use this function in other work modes like counting pieces, weighing in percents etc. Only values and units can change.

24.3. Maximal force latch


Procedure:

- Enter the **TOP** work mode:



- **TOP** selection is signalled by the **Max** pictogram in the upper line of the display:



- When a force acting on the pan changes on the display only the maximal value can be seen,
- Remove the acting force,
- Press  before the next measurement.

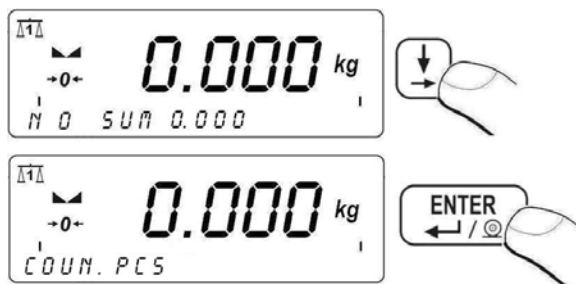
Return to weighing:


See 11.3.

24.4. Counting pieces

The standard software is equipped in a counting pieces procedure. If counting pieces is to be proceeded in a package/container, tare the package/container first.

24.4.1. Enabling the work mode

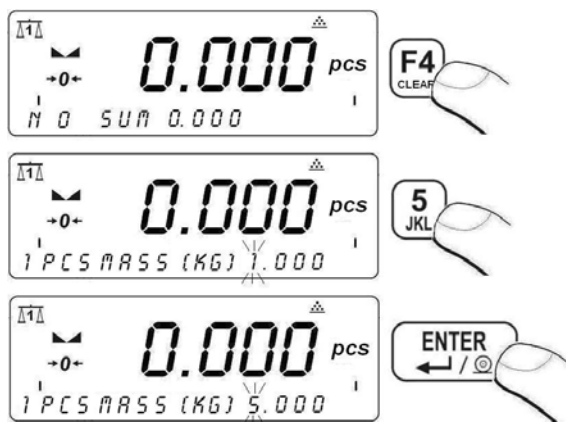


- **COUNTING PCS** procedure is active when  pictogram is displayed.

24.4.2. Setting standard mass by inscribing the mass of a single piece

Procedure:

- Enter **COUNTING PCS** and then:



Press  to initialise **COUNTING PCS.** with automatic setting of standard mass.

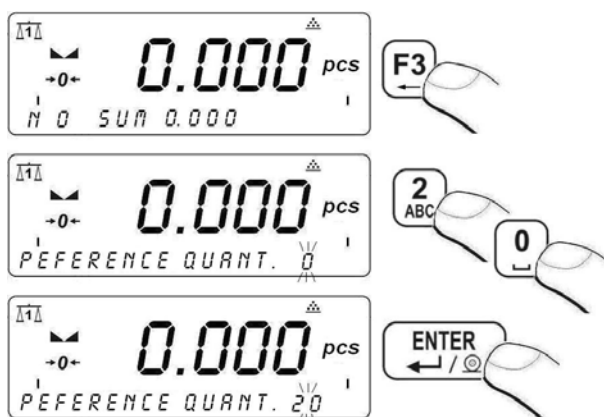
NOTICE:

The mass of a single piece cannot be lower than 0.1d and greater than the full scale.


24.4.3. Setting the standard mass by declaring the quantity of a sample

Procedure:


- Enter **COUNTING PCS.** and then:



While inscribing a sample quantity it should be remembered that the mass of a single piece should not be lower than **0.1 d** and the total mass of a sample (all pcs) should not be lower than **1 d**. An error appears when this two conditions are not performed.

- After inscribing a required sample quantity press  and you will see:




If pieces are to be weight in a container put the container first and tare it. Then put a load of pieces, wait for the equilibrium (▲) confirm it by pressing .

Software automatically calculates a single piece mass and goes to **Counting pieces:**



NOTICE:

If a user confirms a sample with  with the empty weight pan, „Err6” will be displayed.

Return to weighing:

See 11.3.

24.5. Deviation in percents in relation to a standard mass

Software can help to control deviations (in %) from a standard (nominal) mass. The standard mass can be settled by weighings or inscribing.

24.5.1. Starting weighing in per cents

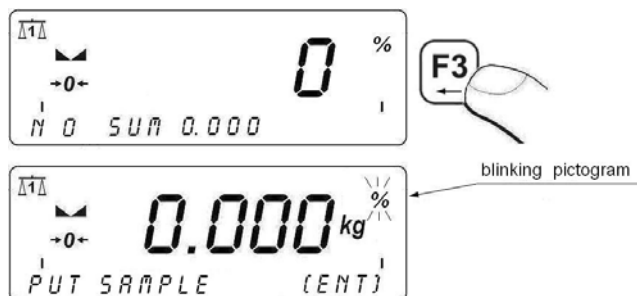



- Selection of **DEVIATIONS** is confirmed by displaying “%” pictogram in the upper right corner of the display.

24.5.2. Weighing a standard mass

Procedure:

- Enter **DEVIATIONS** and then:



- Put a load to be a standard mass on the weight pan,
- After the equilibrium is reached (balance icon) press ,
- You will see the indication of **100,00%**,
- From this moment all results will be displayed in percents:



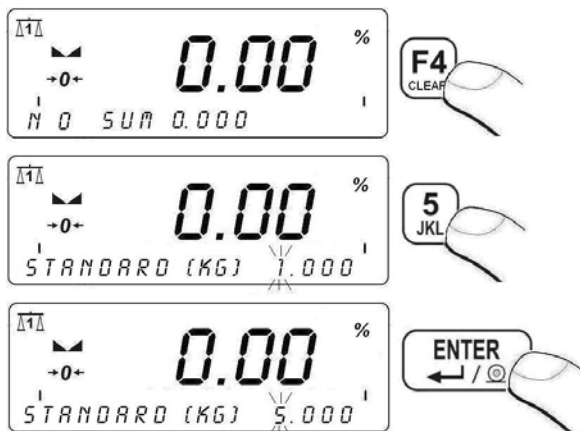
Return to weighing:

See 11.3.

24.5.3. Inscribing a standard mass

Procedure:

- Enter **DEVIATIONS** and then:



From this moment all results will be displayed in percents.



Return to weighing:

See 11.3.

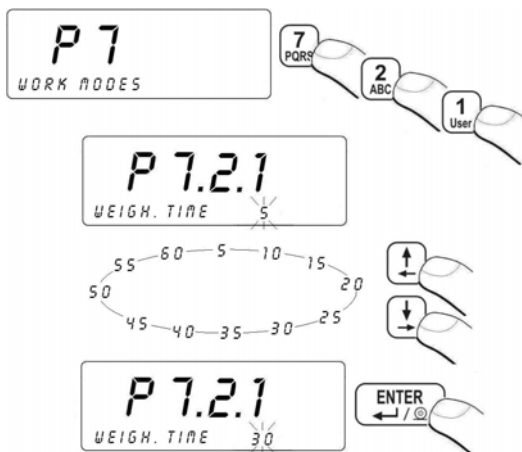
24.6. Weighing animals

24.6.1. Weighing time setting

Users can set in seconds the time of weighing

Procedure:

- Enter **<P7 WORK MODES>** and then:



Return to weighing:

See 11.3.

24.6.2. Starting the work mode



- WGH. ANIMALS** mode is signalled by showing ► pictogram in the right side of the picture.

24.6.3. Procedure of weighing animals

- After starting **ANIM. WEIGH.** (see 24.6.2) put the animal on the platform,
- Press **F3** to start the process of weighing,
- You will see a set of dashes on the display <-----> showing the progress of weighing during the time set in **<P7.2.1 AVER. TIME>** - (see 24.6.1),
- After the procedure of weighing is completed the result will be latched,
- Additionally you will hear a short “beep” sound and see **Hold** pictogram in the left part of the display:



- Before initiating the next weighings press **+0+** key,
- Weighing procedure can be terminated while in progress by pressing **ESC**.

Return to weighing:

See 11.3.

24.7. Dosing

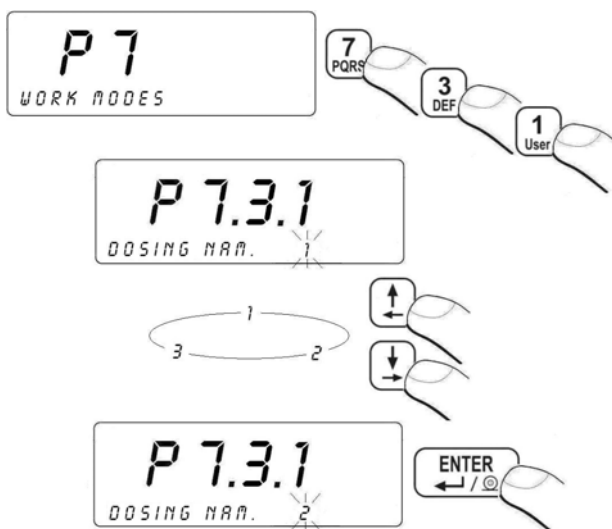
Standard indicator is equipped with signalling fields and internal circuit of - 3 optoinsulated inputs (5÷24V DC), 3 optoinsulated reed relay outputs.

24.7.1. Setting dosing mode

Users can chose one of three different modes <**P7.3.1 DOSE. MODE**>.

Procedure:

- Enter <**P7 WORK MODES**> and then:



- | | | |
|-------------------|----------|---|
| DOSE. MODE | 1 | - manual operation (after pressing F3) |
| DOSE. MODE | 2 | - automatic operation, |
| DOSE. MODE | 3 | - „-” negative dosing (after tarring +T+ and pressing F3). |

Return to weighing:

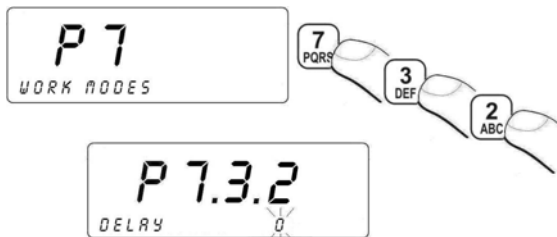
See 11.3.

24.7.2. Time interval between changing dosage thresholds

By setting **<P7.3.2 DELAY>** parameter users can set a delay time between changing dosing thresholds.

Procedure:

- Enter **<P7 WORK MODES>** and then:



Using numeric keys inscribe the required value (0 to 60 s) and confirm by pressing **ENTER**.

Return to weighing:

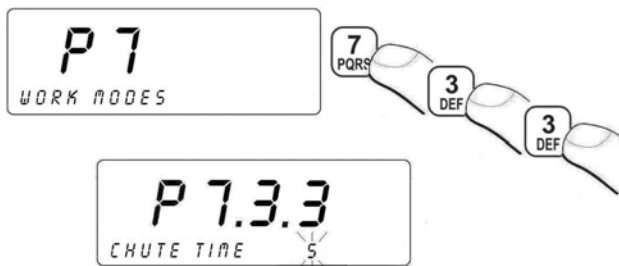
See 11.3.


24.7.3. Time interval completing process

Users can set **<P7.3.3 CHUTE TIME>** parameter to change time of completing a process of dosing after indication drops below **LO**.

Procedure:

- Enter **<P7 WORK MODES>** and then:



Using numeric keys inscribe a requires value (0 to 60 s) and confirm by pressing .

Return to weighing:

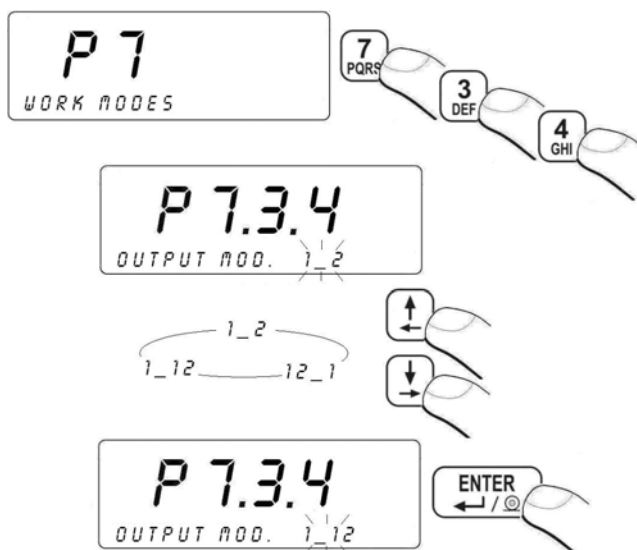
See 11.3.

24.7.4. Mode for OUTPUTS

Software includes three different algorithms operating on OUTPUTS that allows the device to readjust to the customer's requirements.

Procedure:

- Enter **<P7 WORK MODES>** and then:



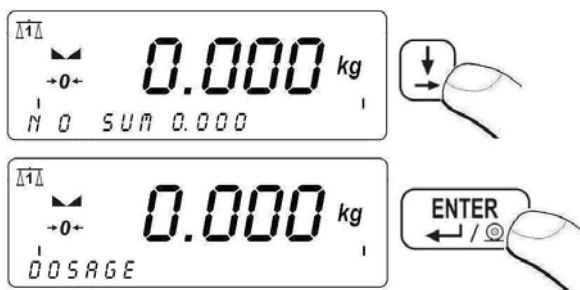
OUTPUT MOD.	Threshold	Rough dosing	Precise dosing
1_2	THERSHOLD 1	1	0
	THERSHOLD 2	0	1
12_1	THERSHOLD 1	1	1
	THERSHOLD 2	1	0
1_12	THERSHOLD 1	1	1
	THERSHOLD 2	0	1




Return to weighing:
See 11.3.

NOTICE:

*If dosing is initiated when the indication is > **LO**, after reaching the indication below **LO** output (outputs) will be automatically switched on. Subsequent dosing process can be started when indication goes below **LO**.*

24.7.5. Starting work modes



After entering the **DOSING** mode the  pictogram is displayed. Press  to start a dosing process. After starting it  starts blinking, keyboard is blocked until the process is completed.

The process completion is signaled by displaying a message:
< **END OF DOSING** > in the bottom line of the display:



This process can be stopped only by pressing **F4** CLEAR. A message will be displayed in the bottom line: < **STOP DOSING** >.



When the procedure is broken or completed  is displayed continuously.

Dosing process can be also terminated by pressing **F2** OK. You will see:



Pressing **F3** — will cause the process to continue.

Pressing **F4** CLEAR will cause the process to break.

Return to weighing:

See 11.3.

24.8. Interactive Terminal

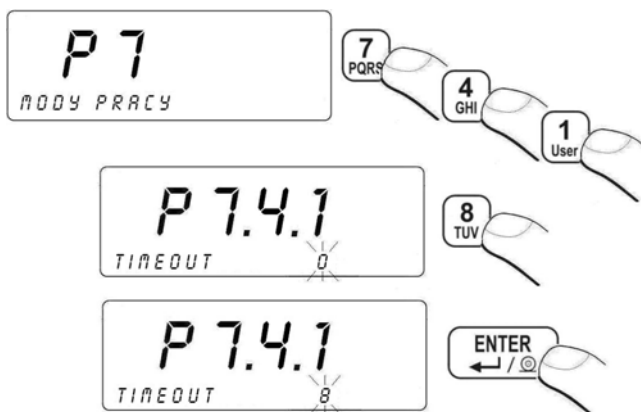
„**Interactive Terminal**” in PUE C41H is a solution intended to use together with PC. A computer program takes control over the terminal using a communication protocol. It allows computer programmers to design their software according to any requirements.

24.8.1. Time for deactivation of interactive procedure

<**P7.4.1 TIMEOUT**> parameter allows to set time (in seconds), after which an interactive procedure is deactivated. **TIMEOUT** starts to count down after software detects the lack of communication with PC.

Procedure:

- Enter <**P7 MODY PRACY**> and then:

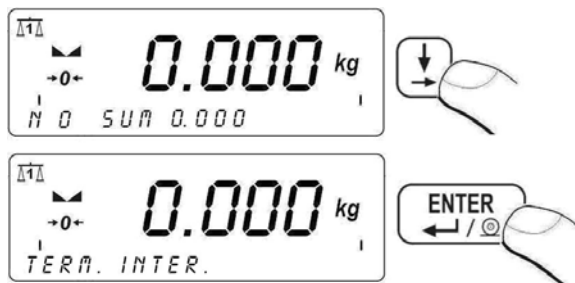


TIMEOUT - possible values 0 to 30s

Return to weighing:


See 11.3.

24.8.2. Enabling operation mode



When the operation mode **INTER. TERM.** (when there is no communication with PC) the name and procedure version is displayed in the bottom line:

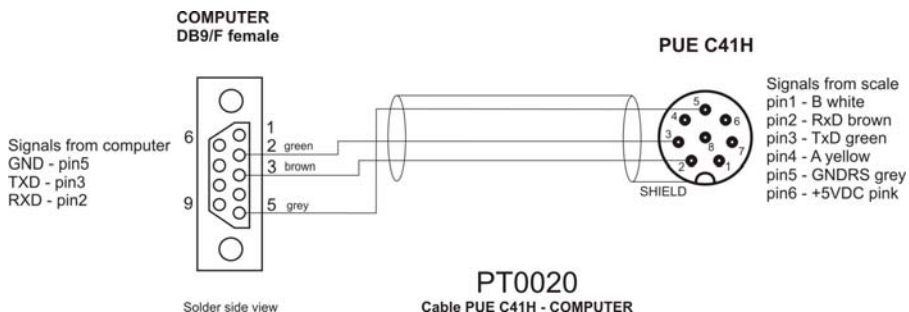


Active connection with PC is signalled by the  pictogram in the left side of the display.

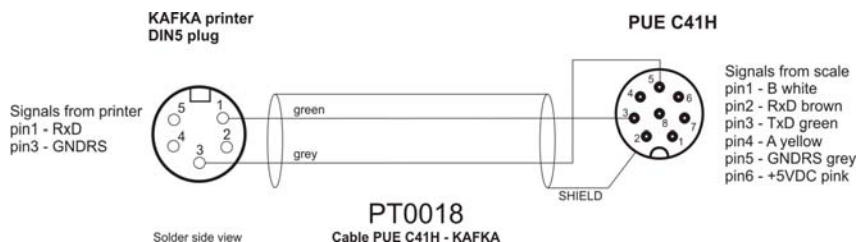
25. DIAGRAMS OF CONNECTION CABLES

STANDARD assembly terminal can cooperate with:

- computers
- slip printers KAFKA, EPSON,
- label printers CITIZEN, ZEBRA,
- external buttons PRINT, TARA, ZERO,
- internal I/O module of 3 optoisolated inputs / 3 reed relay outputs.

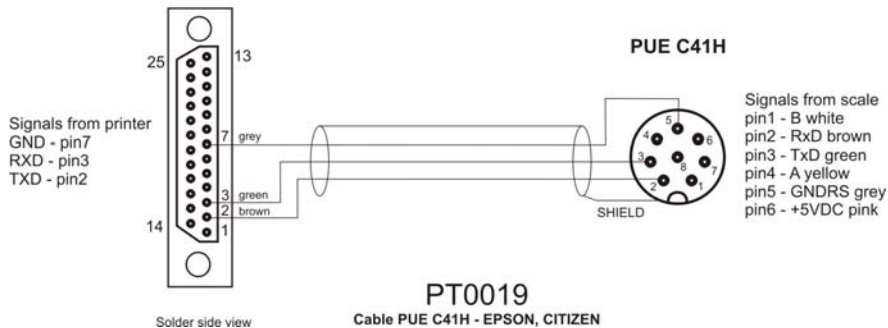


Scale-computer cable



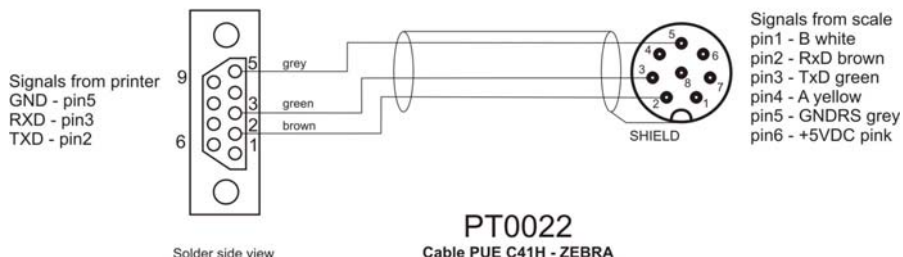
Scale – Kafka printer cable

**EPSON, CITIZEN printer
DB25/M male**



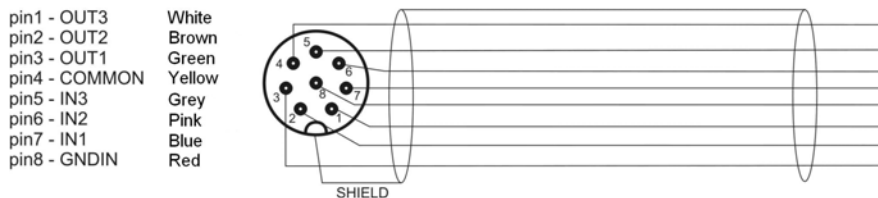
Scale –Citizen, Epson printer cable

**ZEBRA printer
DB9/M male**



Scale – Zebra printer cable

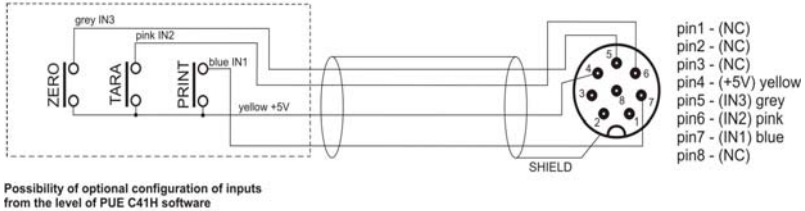
PUE C41H



Cable PUE C41H - IN/OUT

Scale - I/O cable

PUE C41H



PT0021

External Buttons PRINT, TARA, ZERO to PUE C41H

PRINT, TARA, ZERO external buttons cable

26. CONNECTORS

Caution:

In accordance to the number of mounted modules the number and the placement of glands and connectors can vary.

Connectors and glands mentioned in the standard solution appears in every option in the same place regardless of the option.

pin1 - OUT3	(NC)
pin2 - OUT2	(NC)
pin3 - OUT1	(NC)
pin4 - COMMON	(+5V)
pin5 - IN3	(IN3)
pin6 - IN2	(IN2)
pin7 - IN1	(IN1)
pin8 - GNDIN	(NC)



I/O connector

pin1 - B (RS485)
pin2 - RxD
pin3 - TxD
pin4 - A (RS485)
pin5 - GNDRS
pin6 - +5VDC



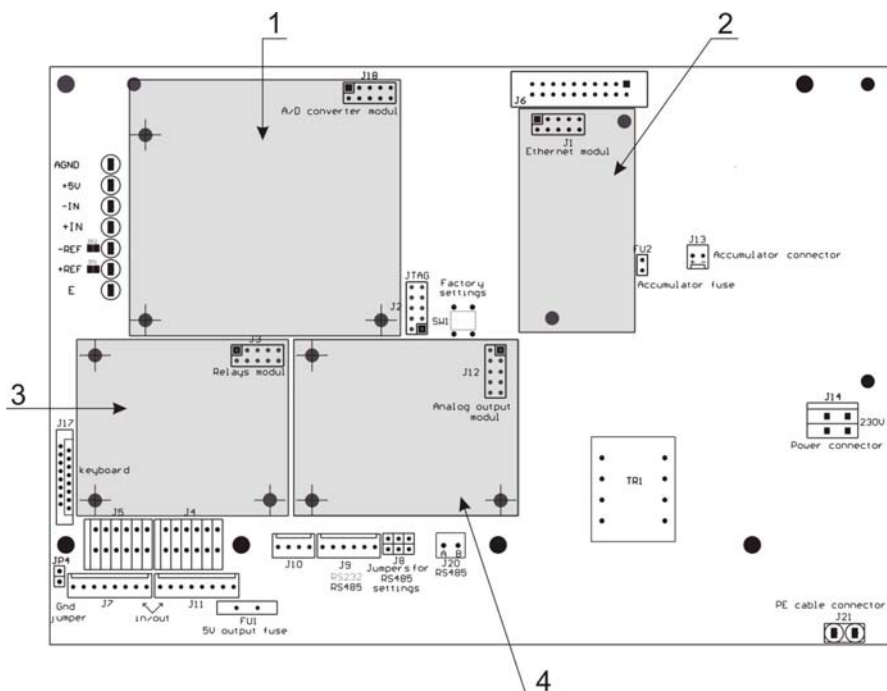
RS232, RS485 connector

27. SPECIFICATION OF ADDITIONAL MODULES

Apart from standard interface, it is possible to equip terminals with additional module increasing functionality of devices:

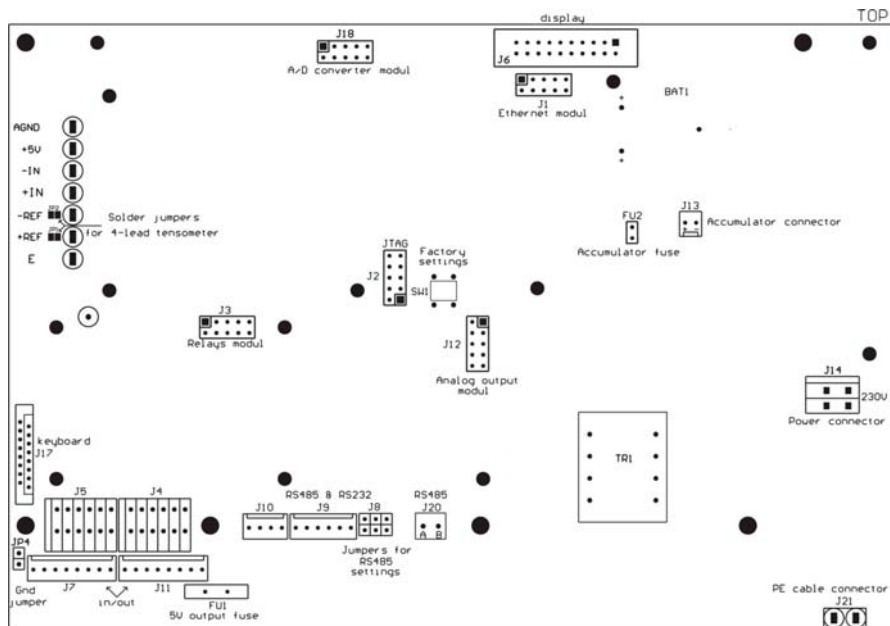
- **ET** - Ethernet module,
- **AN** - analogue outputs module,
- **PK 1** - relay outputs module,
- **WE 8** - 8 inputs / 8 outputs module,
- **WE 4** - 4 inputs / 4 outputs module,
- **DP 1** - Additional A/D converter module. (for second platform)
- **RS D1** – RS485 led out via a gland

Main board view with some additional modules being installed:



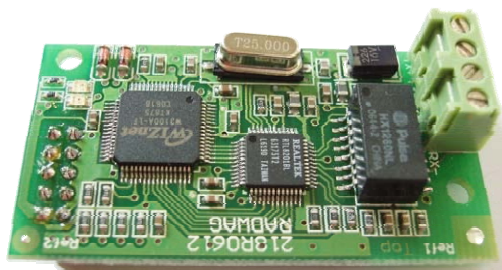
- 1 - additional A/D module,
- 2 - Ethernet module,
- 3 - relay outputs module,
- 4 - analogue output module.

Main board view with connectors for additional modules:



- J18 – DP 1 module
- J1 – Ethernet ET 1G, ET 1 D module
- J3 – Relay module
- J12 – WE 8 module
- J12 – AN module

27.1. Ethernet module - ET



Ethernet module PCB

This module is designed according to TCP/IP 10/100 Mbit/s standard. It comprises two signalling LED's:

- D2 lights - Ethernet connection established,
- D1 blinks - transmission 10Mbit/s or 100Mbit/s.

Module accessible in two versions:

ET 1G : with external connector on the scale housing;

ET 1D : with cable (twisted pair) about 3m length led out via the gland on the scale housing Intended for connecting to a switch (not computer). Terminated with a standard RJ45 plug.

27.1.1. Mounting way in PUE C41H

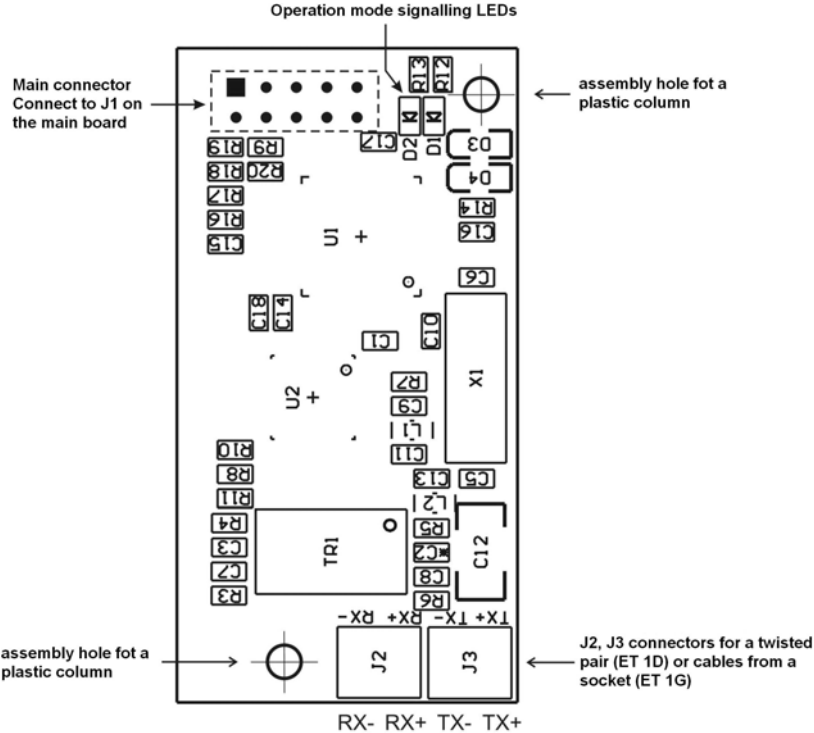
This module is intended for mounting inside PUE C41H indicators. It is mounted to the main board to the 10-pin **J1** connector.

- For **ET 1G** version of module a 4-pin Ethernet connector is installed on the back wall of the housing.
- For **ET 1D** version of module a gland is installed on the back wall of the housing through which a shielded cable is led out (twisted pair 3m length terminated with RJ45 plug).

Mounting procedure:

1. Unplug from mains;
2. Unscrew the back wall of the housing;
3. Install the module in **J1** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module;
5. For ET 1G unscrew one of the plugged glands and install a socket instead;
6. For ET 1G version connect wires from **PT0017** socket to **J2** and **J3** connectors on the Ethernet module according to the description below;
7. For ET 1D version unplug one of the glands and led the **PT0014** (twisted pair) cable out;
8. For ET 1D version connect the shield of **PT0014** cable to the indicator housing (screwed terminator, 4mm diameter);

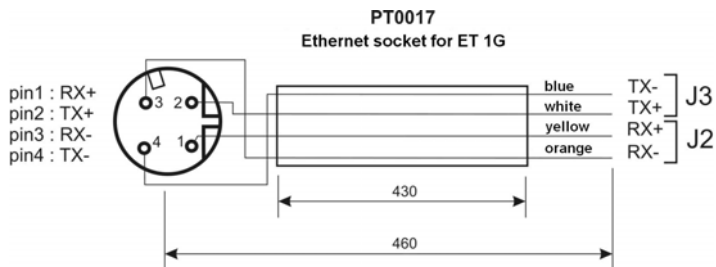
9. Connect the **PT0014** cable to **J2** and **J3** connectors on the Ethernet module according to the description;
10. Cable (twisted pair) or wires from the Ethernet socket connect to the group of wires (unhook band clips fastening the group of wires, lay the cable or conductors from the socket and hook the band clips). Band clips of multiple usage;
11. Screw down the back wall.



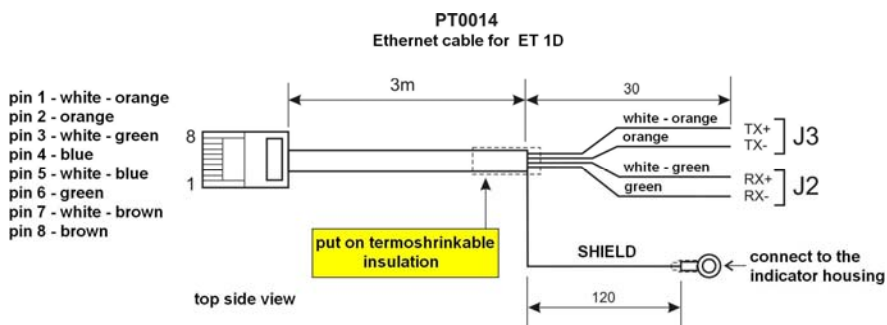
- | | | |
|--------------------|------|--|
| TX+ white - orange |] J3 | Colours of wires in the twisted pair cable from PT0014 for ET 1D |
| TX- orange | | |
| RX+ white - green |] J2 | |
| RX- green | | |
| TX+ white |] J3 | Colours of cables from PT0017 for ET 1G |
| TX- blue | | |
| RX+ yellow |] J2 | |
| RX- orange | | |

Ethernet module on the main board of PUE C41H

27.1.2. Drawings of sockets and cables for Ethernet

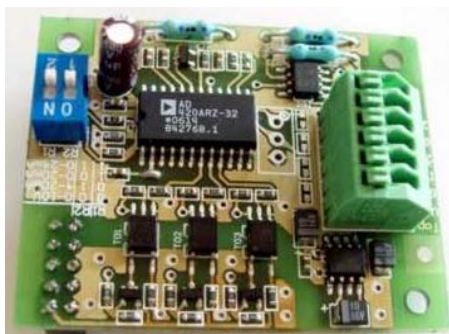


Ethernet socket for ET 1G version



Ethernet cable for ET 1D (version for a SWITCH)

27.2. Analogue output module



Module of analogue outputs

Module accessible in three configurations:

- Voltage output AN 0-10V
- Current output AN 4-20mA
- Current output AN 0-20mA

27.2.1. Technical specification

Work modes	4 - 20mA , 0 - 20mA, 0 - 10V
Resolution	16 bit
Current output resistance	<500Ω
Voltage output resistance	>400Ω
Power supply	24V DC (12 - 30V DC) max 40mA

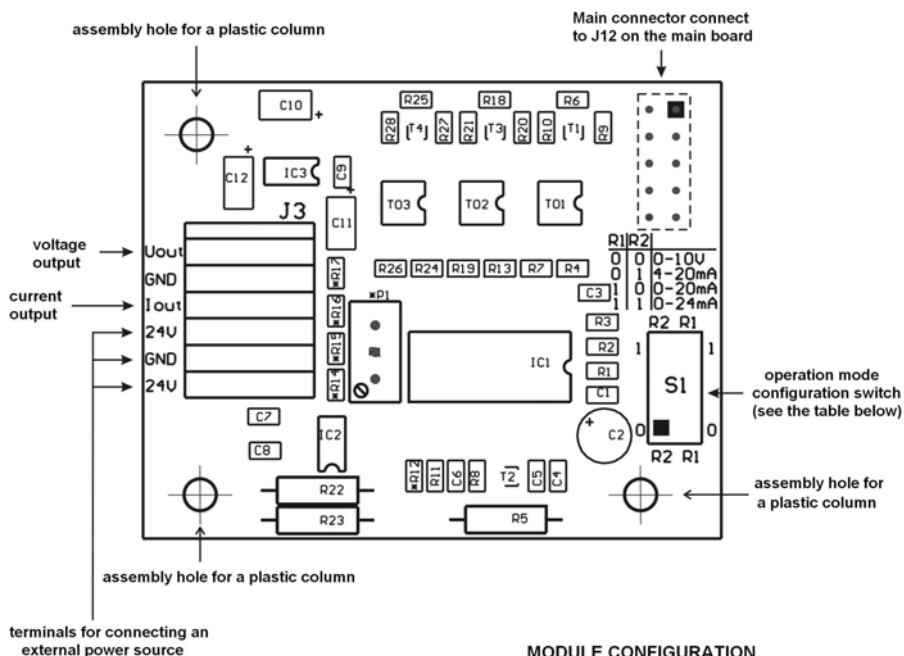
27.2.2. The way of installing inside PUE C41H

These modules are intended to mount inside PUE C41H.

They need to be connected to the 10-pin J12 connector. For all configurations of AN, there is a gland installed on the back wall of the housing. A 3-meter shielded cables are led out via the gland. Wires should be free from insulation.

Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in J12 on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module;
5. Led the PT0015 cable through one of the free glands;
6. Connect the PT0015 cable to J3 on the analogue module according to the description below;
7. Connect the PT0015 cable shield to the housing (screwed terminator, 4mm diameter);
8. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
9. Screw down the back wall.



ANALOGUE OUTPUTS' MODULE CURRENT
LOOP 4-20 mA SET AS DEFAULT

MODULE CONFIGURATION

R1	R2	Operation mode
0	0	0-10V
0	1	4-20mA
1	0	0-20mA
1	1	0-24mA

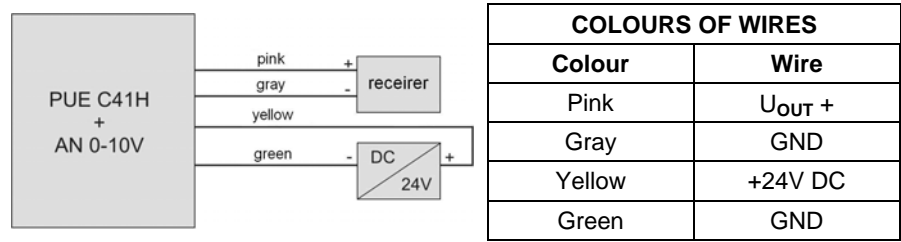
Mounting of **AN** module on the main board of PUE C41H

27.2.3. Configuration of work modes of analogue modules

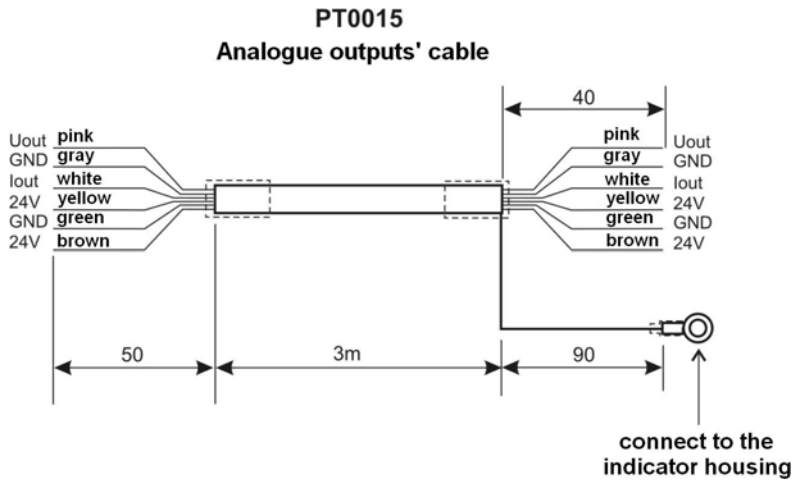
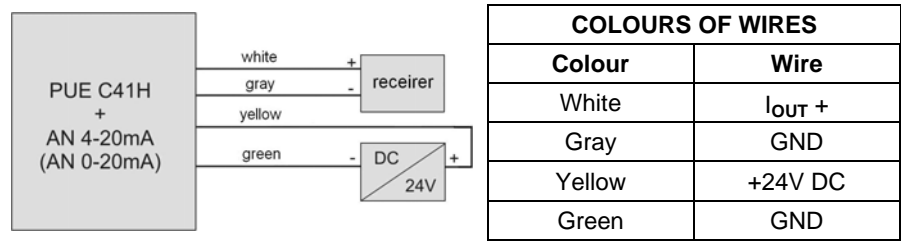
A work mode of analogue modules can be set using **S1** switch according to the drawings above (table „configuration of analogue modules”). Near the **S1** switch on the PCB you can find a description.

27.2.4. Connections to AN module

Drawing of connections of voltage output:



Drawing of connections of current loop:



Cable for analogue output

27.3. Relay module - PK1



Relay module PCB - PK1

This is an alternative solution for reed relay outputs present on the main board in the standard solution. The usage of this module excludes the usage of standard reed relay outputs. The advantage of using this module are the electrical parameters of contacts. All outputs can be freely configured (from the level of parameters). The cable is led out via a gland on the back wall of the housing (3m length).

27.3.1. Technical specification

Quantity of relays	4
Output type	Operating contacts
Wire diameter	0,14 ÷ 0,5mm ²
Current-carrying capacity of contacts	230V AC - 2A, 30V DC - 2A

CAUTION:

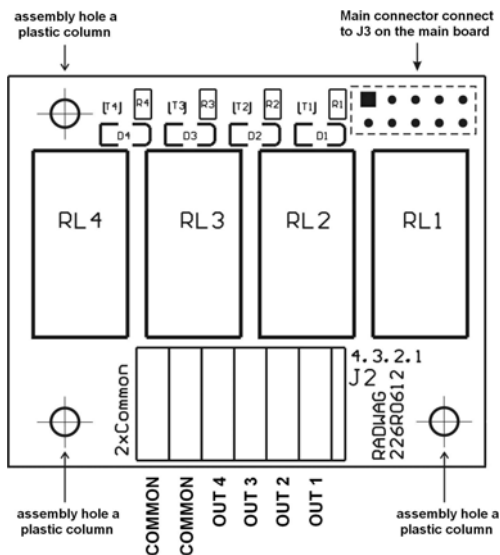
When inductive load it is advisable to use a suppression circuit (LC or voltage-dependent resistors) installed next to the receptor. Parameters of these circuits are determined by clients.

27.3.2. Installing in PUE C41H indicators

These module are intended to mount inside PUE C41H indicators. It is mounted to the main board to the 10-pin **J3** connector. An additional gland is installed on the back wall and a 3m cable is led out through it. Wires should be free from insulation.

Installing procedure:

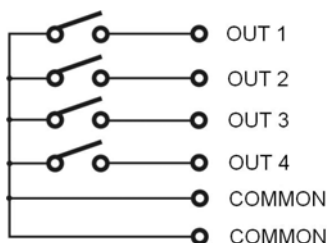
1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J3** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module PK1;
5. Led the **PT0016** cable through one of plugged glands;
6. Connect the **PT0016** cable to **J2** connector on the PCB according to the description below;
7. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
8. Screw down the back wall.



Installing a PK1 module on the main board of PUE C41H

27.3.3. Drawing of cables and outputs

Relay outputs diagram:



Wires	
Colour	Description
Brown	Common
Green	Common
Yellow	OUT4
White	OUT3
Gray	OUT2
Pink	OUT1

Technical specification of the module:

Number of relays	4
Output type	Operating contact
Wire intersection	0,14 ÷ 0,5mm ²
Load-current capacity	230V AC - 2A, 30V DC - 2A

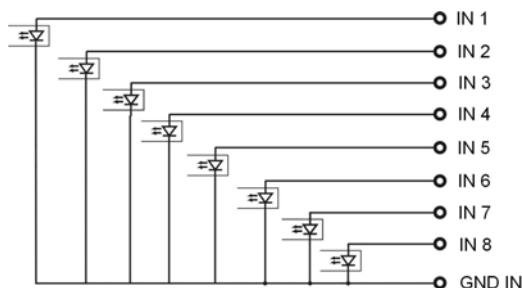
CAUTION:

Module of relays is an alternative solution for reed relays that are present on the main board, using this module excludes using reed relays.

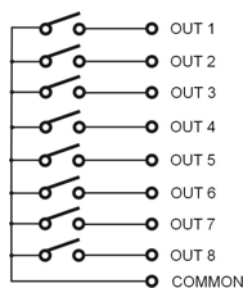
27.4. WE 8 - 8 inputs / 8 outputs module

WE 8 module can be connected as an alternative to the module of analogue output and relay module. Its task is to expand the functionality of an indicator for 8 inputs and 8 outputs freely configurable. It expands functionality of terminals. It comprises on board optoisolated inputs and outputs freely configurable from the level of indicator.

I/O diagram:



WE8 inputs diagram



WE8 outputs diagram

Description of input output wires:

Cable with 18x0,5mm² numbered wires.

INPUTS		OUTPUTS	
Wire number	Input description	Wire number	Output description
1	IN1	10	OUT1
2	IN 2	11	OUT2
3	IN 3	12	OUT3
4	IN 4	13	OUT4
5	IN 5	14	OUT5
6	IN 6	15	OUT6
7	IN 7	16	OUT7
8	IN 8	17	OUT8
9	GNDWE	18	COMMON

Technical specification:

Number of inputs	8
Input type	Optoinsulated
Input voltage range	5 - 24V DC
Wire intersection	0.14 ÷ 0.5mm ²
Output number	8
Output type	Reed relay operating contacts
Wire intersection	0,14 ÷ 0,5mm ²
Load-current capacity	50V DC - 0,2A

Caution:

If **WE 8** module is installed in it does not allow to install **AN** analogue output module and/or **PK 1** module of relays.

27.5. WE4 - 4 inputs/4 outputs module

WE 4 module comprises 4 optoinsulated inputs and 4 optoinsulated outputs of reed relays. The input / output wires are led out via a gland on the back wall of the housing (3m length).

27.5.1. Technical specification

Parameters of outputs	
Quantity of outputs	4
Type of outputs	Reed operation contacts
Wire diameter	0,14 - 0,5mm ²
Maximal load-current contact capacity	0,2A DC
Maximal forward voltage	50V DC
Parameters of inputs	
Quantity of inputs	4
Input type	Optoinsulated
Wire diameter	0,14 – 0,5mm ²
Control voltage range	5 -24V DC

27.5.2. Colours of cables for I/O:

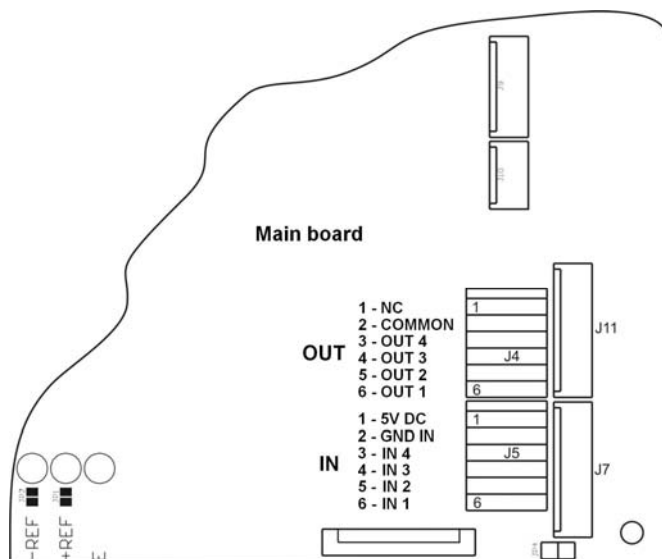
COLOURS FOR OUTPUT CABLES		COLOURS FOR INPUT CABLES	
colour	description	colour	description
BROWN	N/A	BROWN	+5V DC (from the terminal)
GREEN	COMMON	GREEN	GND WE
YELLOW	OUT4	YELLOW	IN4
WHITE	OUT3	WHITE	IN3
GREY	OUT2	GREY	IN2
PINK	OUT1	PINK	IN1

27.5.3. Installing method in PUE C41H indicators

WE4 modules are equipped in two cables, one for inputs and one for outputs.

Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. If inputs and outputs are installed at the same time, dismount I/O socket and install a PG9 gland instead. LED the **PT0016** cable through it (the same way like in case of relay outputs). If only 4 inputs or 4 outputs are installed unplug one of the existing glands and led the **PT0016** cable through it.
4. Connect the **PT0016** cable to the **J5** connector for inputs or to the **J4** for outputs, on the main board of PUE C41H.
5. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
6. Screw down the back wall.



Installing WE4 modules on the main board of PUE C41H

27.6. DP1 – module for an additional platform



DP1 PCB

DP1 modules increase functionality of PUE C41H indicators by possibility of adding an additional platform. It is intended to mount inside the indicator. DP1 modules require an additional gland to lead in the platform cable.

27.6.1. Technical specification

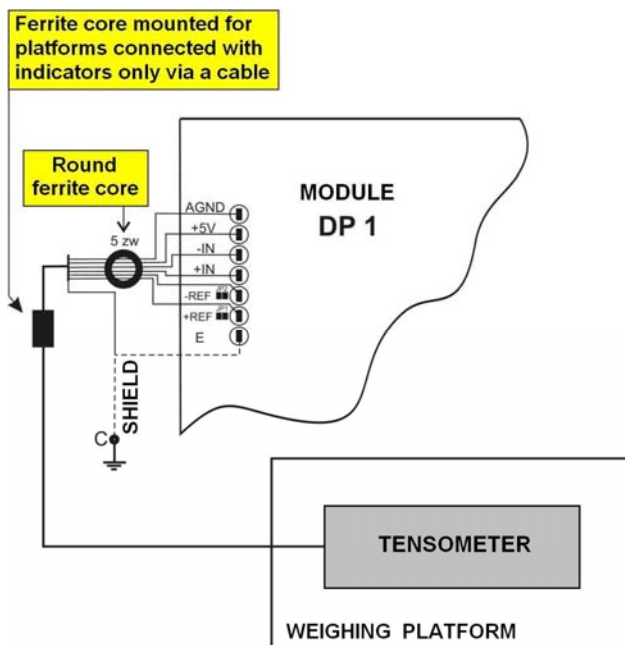
Useful number of internal divisions	8 388 608
OIML class	III
Number of verification divisions	6 000
Maximal change of input signal	19mV
Maximal voltage per verification divisions	3,3 μ V
Minimal voltage per verification divisions	1 μ V
Minimal tensometer impedance	90 Ω
Maximal tensometer impedance	1200 Ω
Tensometer excitation voltage	5V
Types of tensometers	4 or 6 wires + shield

27.6.2. Colours of wires

RADWAG Designation	Colour	Designation of soldering pads on PCB's.
+INPUT -INPUT +OUTPUT - OUTPUT +SENSE - SENSE SHIELD	brown green yellow white grey pink yellow-green	+5V AGND +IN -IN +REF - REF (according to the rule of connecting shields)

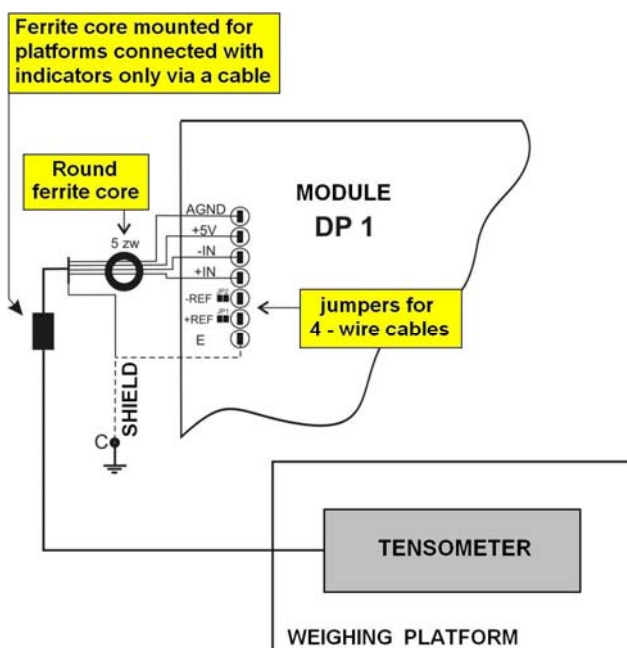
27.6.3. Connecting additional platforms

Connecting 6-wire tensometers



E - tensometer cable shield
 REF+ - "SENSE +" from tensometer (JP1 not soldered)
 REF- - "SENSE -" from tensometer (JP2 not soldered)
 IN+ - "OUTPUT+" from tensometer
 IN- - "OUTPUT-" from tensometer
 +5V - "INPUT+" from tensometer
 AGND - "INPUT-" from tensometer

Connecting 4-wire tensometers



E - tensometer cable shield
 REF+ - solder jumper JP1
 REF- - solder jumper JP2
 IN+ - "OUTPUT+" from tensometer
 IN- - "OUTPUT-" from tensometer
 +5V - "INPUT+" from tensometer
 AGND - "INPUT-" from tensometer

The rules of connecting shields from tensometer cable

For assuring appropriate operation use the description below to connect the shield of the tensometer properly. In both cases (6- and 4-wire cables) the same way rule are valid:

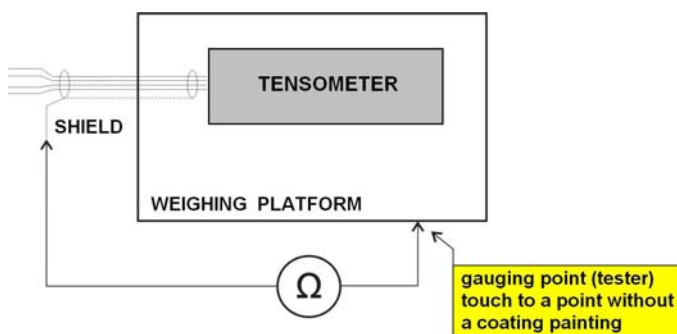
	platforms connected to indicators in metal housing via a cable only	platforms electrically connected to indicators' metal housings e.g. pillars , racks
Load cells without internal shield connection to the tensometer body	POINT C	E
Load cells with internal shield connection to the tensometer body	POINT C	POINT C

Point C – screwed terminal electrically connected to the metal housing of the indicator (possible using of soldering eye)

E – soldering pad on a **DP1** PCB

The way of checking connection between the shield and the tensometer body

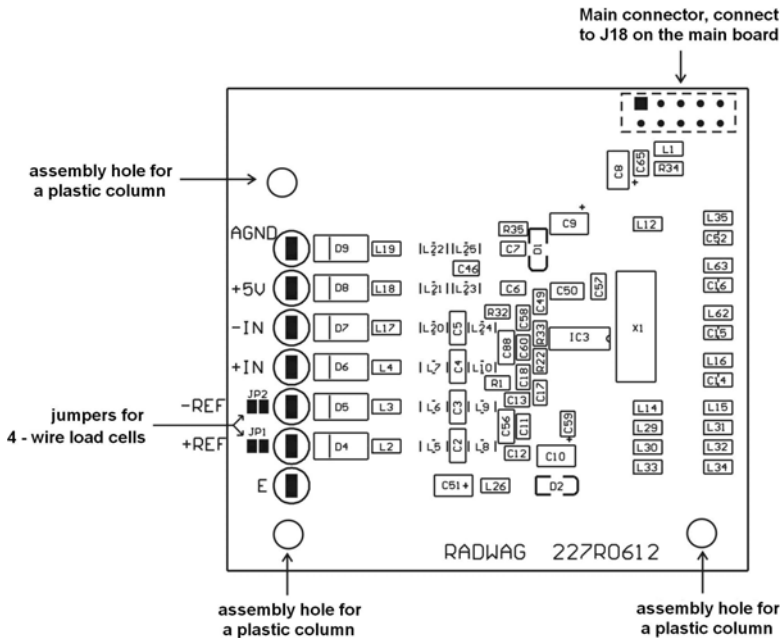
Use an ohmmeter for this purpose.



27.6.4. Installing in PUE C41H housing

DP1 modules are intended to mount inside PUE C41H housings. It is mounted to the main board to the 10-pin **J18** connector. For **DP1** module an additional gland is installed on the back wall of the housing.

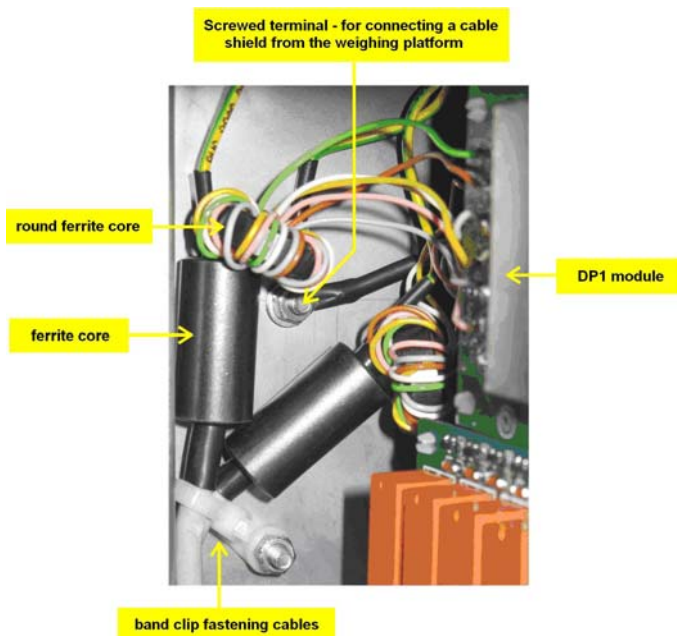
1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J18** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module **DP1**.



Installing DP1 module on the main board of PUE C41H

5. Led a tensometer cable through the PG7 gland next to the gland of main platform;
6. Put on a ferrite core on the cable (core of appropriate internal diameter);
7. Turn the wires on the ferrite core (5 turns);

8. Solder the wires to the pads on the DP1. **Use soldering iron (no solder guns or Rother inductive devices);**
9. Fasten the cable to the housing using a band clip (to the screwed terminal on the back wall of the housing);
10. Screw down the back wall.



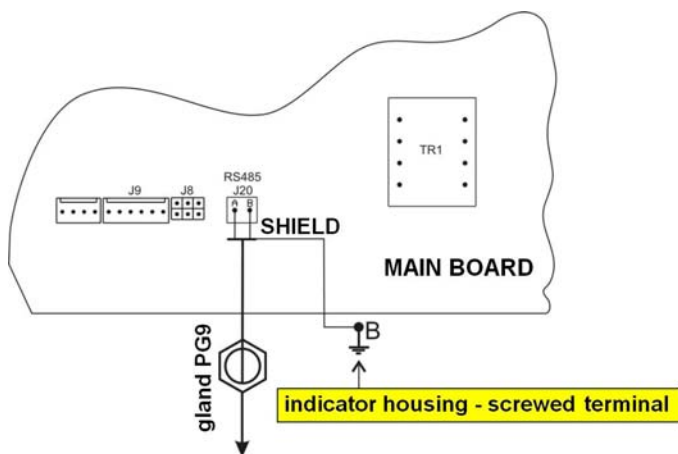
27.7. RS485 led out via RS 1D gland

A version with the **RS485** interface led out via a gland (in the standard solution RS485 is present in a socket). A 3m cable is led out through the gland.

27.7.1. Installing inside the PUE C41H housing

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Unplug one of the unused glands and led out the **PT0012** cable through it;

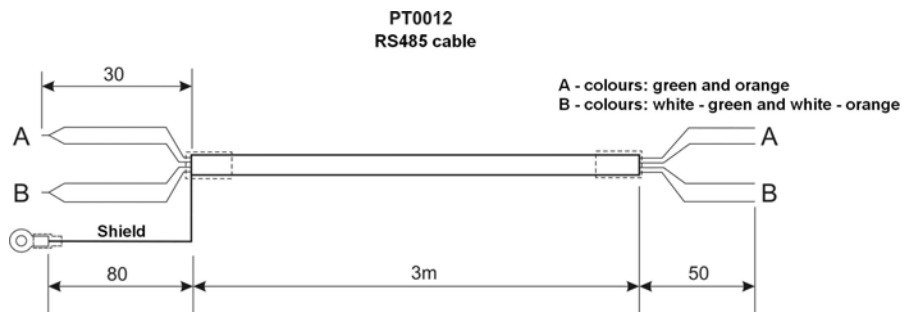
4. Connect the **PT0012** cable to the **J20** connector (ARK type) on the main board of PUE C41H:



***PT0012** cable connecting to the main board of PUE C41H*

5. Connect the **PT0012** shield to the housing (4mm screwed terminal on the back wall)
6. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
7. Screw down the back wall.

27.7.2. RS 485 - PT0012 cable drawing



28. COMMUNICATION PROTOCOL

28.1. General information

- A. A character protocol scale-terminal has been designed for communication between RADWAG scales and external devices via RS-232 interface.
- B. It consists of commands sent from an external device to the scale and a responses from a scale.
- C. Responses are sent every time after receiving a command (reaction for any command).
- D. Using commands allows users to receive some information about the state of scale and/or influence the operation e.g.: Requesting weighing results, display control.

A set of commands for RS interfaces:

Commands	Description of commands
Z	Zeroing
T	Tarring
S	Send the stable result in basic unit
SI	Send the result immediately in basic unit
SU	Send the stable result in current unit
SUI	Send the result immediately in current unit
C1	Switch on continuous transmission in basic unit
C0	Switch off continuous transmission in basic unit
CU1	Switch on continuous transmission in current unit
CU0	Switch off continuous transmission in current unit
K1	Lock the scale keyboard
K0	Unlock the scale keyboard
S1	Start dosing/filling
S0	Stop dosing/filling
DH	Set lower threshold
UH	Set upper threshold
ODH	Read lower threshold
OUH	Read upper threshold
PC	Send all implemented commands

Notice:

1. *Each command have to be terminated in CR LF*
2. *The best Policy for communication is not sending another command until the former answer has been received.*

28.2. Respond message format

After sending a request message you can receive:

XX_A CR LF	command accepted and in progress
XX_D CR LF	command completed (appears only after XX_A)
XX_I CR LF	command comprehended but cannot be executed
XX _ ^ CR LF	command comprehended but time overflow error appeared
XX _ v CR LF	command comprehended but the indication below the
XX _ OK CR LF	Command done
ES_CR LF	Command not comprehended
XX _ E CR LF	error while executing command – time limit for stable result exceeded (limit time is a descriptive parameter of the scale)

XX - command name
_ - substitutes spaces

28.3. Opis komend**28.3.1. Zeroing**

Syntax **Z CR LF**

Possible answers:

Z_A CR LF - command accepted and in progress
Z_D CR LF - command completed
Z_A CR LF - command accepted and in progress
Z_ ^ CR LF - command comprehended but zero range overflow appeared
Z_A CR LF - command accepted and in progress
Z_E CR LF - time limit for stable result exceeded
Z_I CR LF - command comprehended but cannot be executed

28.3.2. Tarring

Syntax: **T CR LF**

Possible answers:

- T_A CR LF** - command accepted and in progress
- T_D CR LF** - command completed
- T_A CR LF** - command accepted and in progress
- T_v CR LF** - command comprehended but tare range overflow appeared
- T_A CR LF** - command accepted and in progress
- T_E CR LF** - time limit for stable result exceeded
- T_I CR LF** - command comprehended but cannot be executed

28.3.3. Send the stable result in basic unit

Syntax: **S CR LF**

Possible answers:

- S_A CR LF** - command accepted and in progress
- S_E CR LF** - time limit for stable result exceeded
- S_I CR LF** - command comprehended but cannot be executed
- S_A CR LF** - command accepted and in progress
- MASS FRAME** - mass value in basic unit is returned

Frame format:

1	2-3	4	5	6	7-15	16	17	18	19	20	21
S	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S CR LF – computer command

S _ A CR LF - command accepted and in progress

S _ _ _ _ - _ _ _ _ _ 8 . 5 _ g _ _ CR LF – command done, mass value in basic unit is returned.

28.3.4. Send the result immediately in basic unit

Syntax: **SI CR LF**

Possible answers:

- SI_I CR LF** - command comprehended but cannot be executed at the moment
SI_A CR LF - command accepted and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S I CR LF – computer command

S I _ ? _ _ _ _ _ 1 8 . 5 _ k g _ CR LF - command done, mass value in basic unit is returned immediately.

28.3.5. Send the stable result in current unit

Syntax: **SU CR LF**

Possible answers:

- SU_A CR LF** - command accepted and in progress
SU_E CR LF - timeout while waiting for stable results
SU_I CR LF - command comprehended but cannot be executed
SU_A CR LF - command accepted and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S U CR LF – computer command

S U _ A CR LF - command accepted and in progress

S U _ _ _ - _ _ 1 7 2 . 1 3 5 _ N _ _ CR LF - command done, mass value in current unit is returned.

28.3.6. Send the result immediately in current unit

Syntax: **SUI CR LF**

Possible answers:

SUI CR LF - command comprehended but cannot be executed

SUI A CR LF - command accepted and in progress

MASS FRAME - mass value in current unit is returned immediately

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

Example:

S U I CR LF – computer command

S U I ? _ - _ _ _ 5 8 . 2 3 7 _ k g _ CR LF - command executed and mass returned

28.3.7. Switch on continuous transmission in basic unit

Syntax: **C1 CR LF**

Possible answers:

C1_I CR LF - command comprehended but cannot be executed

C1_A CR LF - command comprehended and in progress

MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

28.3.8. Switch off continuous transmission in basic unitSyntax: **C0 CR LF**

Possible answers:

C0_I CR LF - command comprehended but cannot be executed**C0_A CR LF** - command comprehended and executed**28.3.9. Switch on continuous transmission in current unit**Syntax: **CU1 CR LF**

Possible answers:

CU1_I CR LF - command comprehended but cannot be executed**CU1_A CR LF** - command comprehended and in progress**MASS FRAME** - mass value in current unit is returned**Frame format:**

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

28.3.10. Switch off continuous transmission in current unit

Syntax: **CU0 CR LF**

Possible answers:

CU0_I CR LF - command comprehended but cannot be executed

CU0_A CR LF - command comprehended and executed

28.3.11. Lock the scale keyboard

Syntax: **K1 CR LF**

Possible answers:

K1_I CR LF - command comprehended but cannot be executed

K1_OK CR LF - command executed

Caution:

This command is not remembered after restart

28.3.12. Unlock the scale keyboard

Syntax: **K0 CR LF**

Possible answers: **K0_OK CR LF** – command in progress

28.3.13. Initiating of dosing/filling

Syntax: **S1 CR LF**

Possible answers:

S1_I CR LF - command comprehended but cannot be executed

S1_OK CR LF - command in progress

28.3.14. Stop of dosing/filling

Syntax: **S0 CR LF**

Possible answers:

S0_I CR LF - command comprehended but cannot be executed

S0_OK CR LF - command in progress

28.3.15. Set lower threshold

Syntax: **DH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

DH_OK CR LF - command executed

ES CR LF - command not comprehended (wrong mass format)

28.3.16. Set upper threshold

Syntax: **UH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

UH_OK CR LF - command executed

ES CR LF - command not comprehended (wrong mass format)

28.3.17. Read lower threshold

Syntax: **ODH CR LF**

Possible answers: **DH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
D	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right

Unit - 3 characters justified to the left

28.3.18. Read upper threshold

Syntax: **OUH CR LF**

Possible answers: **UH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
U	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right

Unit - 3 characters justified to the left

28.3.19. Send all implemented commands


Syntax: **PC CR LF**

Possible answers:

PC_A "Z,T,S,SI,SU,SUI,C1,C0,CU1,CU0,PC,K1,K0,DH,UH,ODH,OUH,S1,S0" – command executed, the indicator have sent all the implemented commands.

28.4. Manual printouts / automatic printouts

Users can general manual or automatic printouts from the scale.

- Manual printouts can be performed after loading the pan and stabilizing indication by pressing .
- Automatic printouts can be performed only after loading the pan and stabilizing indication.

Notice:

If a scale is verified printouts of immediate values are blocked.

Format frame:

1	2	3	4-12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

Example 1:

_____ **1 8 3 2 . 0 _ g _ CR LF** – the printout generated from the scale after pressing ENTER/PRINT.

Example 2:

? _ - _____ **2 . 2 3 7 _ l b _ CR LF** - the printout generated from the scale after pressing ENTER/PRINT.

Example 3:

^ _____ **0 . 0 0 0 _ k g _ CR LF** - the printout generated from the scale after pressing ENTER/PRINT.

28.5. Continuous transmission

The indicator can work in a continuous transmission mode. It can be switched on or off in parameters or using RS232 commands.

Frame format sent by the indicator when continuous transmission is set:

1	2	3	4 -12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

28.6. Configuring printouts

If some information included are redundant or not sufficient and there is a necessity of changes you can design a non-standard printout. There is possible to create up to four standard printouts (see the chapter. 17).

29. COMMUNICATION PROTOCOL RADWAG 03 – FOR INTERACTIVE TERMINAL

RADWAG 03 protocol is intended to master-slave systems. It consist in request-response frames. This protocol is enabled only in the interactive terminal mode.

29.1. Command and respond frames

Command /respond frames are built as follows:

1. Initiating byte - 06H for commands, 07h for answers.
2. Address – two bytes in ASCII e.g. 01.
3. Group of commands – it characterises whole groups of commands as far as the intended use is concerned (terminated with a delimiter), e.g.1 – is a group of commands for interactive terminal.
4. Command – characterises the intended use of command e.g. operations on variables (terminated with a delimiter).
5. Variables, which fulfil subsequent fields have Variables are equivalent or subordinate to the preceding ones. (all fields terminated with a delimiter).
6. Checksum - 2 bytes in hexadecimal code – Logic sum Exclusive-OR of all the prior bytes.

Command:

<SOH>

<ADDRESS - 2 HEX BYTES>

<GR of COMMANDS><DELIMITER>

<COMMAND><DELIMITER>

<FIRST VARIABLE><DELIMITER>

...

Possible additional fields terminated with a delimiter

...

<CHECKSUM - 2 HEX BYTES>

<CR>

<LF>

Response:

<SOH>

<ADDRESS - 2 HEX BYTES>

< GR of COMMANDS><DELIMITER>

<COMMAND><DELIMITER>

<FIRST VARIABLE><DELIMITER>

...
Possible additional fields terminated with a delimiter

...
<STATUS>< DELIMITER >
< CHECKSUM - 2 HEX BYTES >
<CR>
<LF>

Caution:

All description of frames contain "|" instead of tabulators that appears in real frames '.

Error messages in interactive terminal:

STATUS OK (0)
ERROR - TERMINAL NOT ACTIVE (-1)

General errors returned in responds:

UNKNOWN PC COMMAND (-100)
TOO FEW PARAMETERS/VARIABLES (-101)
WRONG PARAMETER/VARIABLE (-102)
COMMAND CANNOT BE EXECUTED (-103)

29.2. Description of commands

29.2.1. Command: 0 - Activation

The interactive procedure always needs activation to exchange data with a computer:

Data: 2nd variable - (1) Activation (0) Deactivation
<06H>011|0|1|3e<CR><LF> - activation frame

Returns: Confirmation
<07H>011|0|0|3E<CR><LF>

Status: OK = 0
WRONG PARAMETER = -102

Caution:

Terminal is automatically deactivated after the timeout inscribed in the P7.4.1 TIMEOUT parameter and returns (-1) error.

29.2.2. Command: 1 – software version

Data: None
<06H>011|1|07<CR><LF>

Returns: 2nd variable – version number
<07H>011|1|1.0.0|0|07<CR><LF> - frame example with 1.0.0 version

Status: OK = 0

29.2.3. Command: 2 – terminal restart

The intended use of this command is to cancel all functions and start from the beginning e.g. to return to any state of the interactive procedure.

Data: None
<06H>011|2|07<CR><LF>

Returns: No answer

Status: N/A

Caution:

This is the only command without any response.

29.2.4. Command: 3 Operations on variables

Data: 2nd variable - (0) Read (1) Write

For readout 3rd variable – variable number

For writing 3rd variable – variable number
4th variable – variable value

<06H>011|3|0|0|05<CR><LF> mass reading
<06H>011|3|1|0|2.1|20<CR><LF> mass writing

Caution:

*You cannot write more than one variable at the same time/command.
Ten mass variable is protected against overwriting (read only).*

<06H>011|3|1|1|1.1|22<CR><LF> save the tare value
 <06H>011|3|0|2|07<CR><LF> read the basic unit
 <06H>011|3|0|3|06<CR><LF> read the display state
 <06H>011|3|0|4|01<CR><LF> read the present unit
 <06H>011|3|0|5|00<CR><LF> read the interactive terminal status

Numbers of variables:

//0 Net mass
 //1 Tare
 //2 basic unit: 0-g, 1-kg, 2-lb, 3-oz, 4-ct, 5-N, 6-pcs, 7-%
 //3 LCD display value
 //4 present unit 0-g, 1-kg, 2-lb, 3-oz, 4-ct, 5-N, 6-pcs, 7-%
 //5 Main status of Interactive Terminal

Caution:

Some variables are read only and any try of overwriting them causes -103 error in response.

Status byte of interactive terminal:

Description starting from LSB:

ZERO	1 - zero; 0 – out of zero zone
STABLE	1 – equilibrium; 0 – not stable
TARE	1 – tare <> 0; 0 – tare = 0
II RANGE	1 – load in 2nd range; 0 – load not in 2nd range
III RANGE	1 - load in 3rd range; 0 – load not in 3rd range
WEIGH. OK	1 – result ready to read; 0 – error in weighing
EDITING FIELD FLAG	1 - active; 0 – not active
PLATFORM FLAG	1 - active; 0 – not active

Returns: for readout - 2nd variable – variable value
 For writing - confirmation

Status: OK = 0

WRONG PARAMETER = -102

COMMAND CANNOT BE EXECUTED = -103

<07H>011|3| 0.500|0|3F<CR><LF> - mass value returned
 <07H>011|3|-103|12<CR><LF> - error -103 returned
 <07H>011|3|0|3D<CR><LF> - response for writing tare value
 <07H>011|3|0|0|04<CR><LF> - Basic unit <0 - grams> returned

<07H>011|3| 999.5|0|36<CR><LF> - display state returned
 <07H>011|3|39|0|3E<CR><LF> - main interactive terminal status

Caution:

Status is returned as decimal

Example:

Let us change the digital status to binary:

Status 34 = 00100010B equilibrium and weighing OK

29.2.5. Command: 4 - LCD

Data:

2nd var.- (0) Clear LCD
 <06H>011|4|0|3B<CR><LF>
 2nd var.- (1) Writing text
 3rd var - (Text)
 <06H>011|4|1|RaDwAg|15<CR><LF>
 Displayed text - RADWAG. All letters uncased.
 2nd var. - (2) Read text from LCD
 <06H>011|4|2|39<CR><LF>
 2nd var - (3) Opens editing field
 3rd var Field type (decimal)
 0-numerical field
 1-alphanumeric field
 2-masked numerical field
 3-masked alphanumeric field
 4th var. Leading text in front of field.
 5th var. Initial text in the field
 (determines field length)
 6th var. (option) cursor position in the field
 <06H>011|4|3|1|Text: |This is text|4|3B<CR><LF> -
 alphanumeric not masked field with a leading text, initial
 text and cursor moved by 4 positions
 2nd var. - (4) Closes editing field
 <06H>011|4|4|3F<CR><LF>
 2nd var. - (5) Returns the text from editing field (without leading text)
 <06H>011|4|5|3E<CR><LF>

Returns: For 2nd variable = (0) or (1) or (2) or (3) or (4)

Returns confirmation

For 2nd variable == (5)

Returns the contents of editing field

<07H>011|4|0|3A<CR><LF> - response for clear screen
 <07H>011|4|0|3A<CR><LF> - response for displaying text
 <07H>011|4|RaDwAg|0|15<CR><LF> - response for reading text
 <07H>011|4|0|3A<CR><LF> - response for initiating editing field
 <07H>011|4|0|3A<CR><LF> - response for closing editing field
 <07H>011|4|gJ|0|1E<CR><LF> - response for reading editing field (text "gJ")

Status: OK = 0
 WRONG PARAMETER = -102
 COMMAND CANNOT BE EXECUTED = -103

29.2.6. Command: 5 - Beep

It works if only an appropriate parameter is set.

Data: 2 var. – Sound duration time in [ms]
 <06H>011|5|500|3F<CR><LF> - generates 0.5 sec

Returns: Confirmation
 <07H>011|5|0|3B<CR><LF>

Status: OK = 0

29.2.7. Command: 6 - keys

Data:
 2nd var. - (0) read keyboard buffer
 <06H>011|6|0|39<CR><LF>
 Codes of keys:

F1-F4	1-4
UNIT	5
-n-	6
-<T>	7
-0-	8
-T-	9
up.	10
down.	11
D.P.	46
Enter	13
Esc	27
0-9	48-57

Keyboard buffer is one-character length

2nd var. - (1) keypressed

3rd var. - key code

<06H>011|6|1|9|08<CR><LF> - send 9 character
(tarring key)

2nd var. - (2) locking keys

3rd var. Locking mask (send as decimal)

<06H>011|6|2|12|01<CR><LF> - block two keys: platform
change and tarring 241=11110001

UNITS (0-locked; 1-unlocked)

Switching platforms (0- locked; 1- unlocked)

INSCRIBING TARE (0- locked; 1- unlocked)

ZERO (0- locked; 1- unlocked)

TARE (0- locked; 1- unlocked)

Returns:

For reading keyboard buffer

2nd var. – returns last code and clears the buffer

<07H>011|6|0|0|34<CR><LF> - empty buffer

<07H>011|6|2|0|03<CR><LF> - answer, 2 – key code F2

Status: OK = 0

WRONG PARAMETER = -102

29.2.8. Command: 7 Platforms

Data:

2nd var. - (0) Read current platform number

<06H>011|7|0|38<CR><LF> - platform 0

2nd var. - (1) Setting current platform (it works even if the key for changing
platform is locked)

3rd var. (option) platform number

<06H>011|7|1|1|01<CR><LF> -setting platform to 1

Returns: Confirmation

<07H>011|7|0|0|00<CR><LF> - response, current platform - 0

<07H>011|7|1|0|01<CR><LF> - response, current platform - 1

Status: OK = 0
WRONG PARAMETER = -102
COMMAND CANNOT BE EXECUTED = -103

29.2.9. Command: 8 Signalling diodes

Data: 2nd var. - (decimal)
DIODE_MIN (red) 1
DIODE_OK (green) 2
DIODE_MAX (red) 4
<06H>011|8|7|30<CR><LF> - switch on all diodes

Return: Confirmation
<07H>011|8|0|3<CR><LF>

Status: OK = 0
WRONG PARAMETER = -102

29.2.10. Command: 9 I/O

Data:

2nd var. - (0) read inputs
2nd var. - (1) write outputs

For writing outputs:

3rd var. Decimal mask

4th var. - (0) switch off

4th var. - (1) switch on inputs indicated in the decimal mask

<06H>011|9|1|15|0|03<CR><LF> - set all

<06H>011|9|1|3|7|33<CR><LF> - set OUT0 and OUT1

<06H>011|9|1|7|3|33<CR><LF> - set OUT0 and OUT1, switch off OUT2
and OUT3

2nd var.- (2) read outputs

2nd var - (3) read inputs (with latched appearance of logical 1s)

2nd var - (4) read inputs (with latched appearance of logical 0s)
<06H>011|9|0|36<CR><LF>

Returns:

For I/O read: 2nd var. -state of inputs/outputs (bit0 = inpt0/output0
 <07H>011|9|0|0|0E<CR><LF>

For writing outputs: Confirmation
 <07H>011|9|0|37<CR><LF>

Status: OK = 0
 WRONG PARAMETER = -102

Caution:

Readout with latched values is useful when short lasting impulses, that can be omitted during subsequent readouts, appear because of limited frequency of readouts. It works in intervals between subsequent readings, first state of inputs is read during terminal initialisation, than any reading updates data in buffers to the present inputs' state.

29.2.11. Command: 10 additional devices**Data:**

2nd var. Type of device
 Barcode scanner (0)
 Transponder card reader (1)
 Printer (2)
 Universal device (3)

3rd var. - (0) Readout
 <06H>011|10|0|0|37<CR><LF>

3rd var - (1) Write

4th var For writing: data field (hexadecimal)
 <06H>011|10|2|1|524144574147|3B<CR><LF> - send
 "RADWAG" to a printer

Returns:

2nd var. For readout: data field (hexadecimal)
 For writing: Confirmation
 <07H>011|10||0|06<CR><LF> - empty buffer, status OK

Status: OK = 0
 WRONG PARAMETER = -102
 COMMAND CANNOT BE EXECUTED = -103

30. ERROR MESSAGES

ERROR "XXX" ESC – RETURN TO PREVIOUS SETTING

(where: XXX – parameter name) – confirmed with **ENTER** of a wrong value in the user's menu,

- Err2** - value beyond the zero range,
- Err3** - value beyond the tare range,
- Err4** - Calibration mass or start mass adjustment error ($\pm 1\%$ for weight, $\pm 10\%$ for start mass),
- Err5** - Mass of a single piece lower than the 0.1 of scale division,
- Err6** - mass of all pcs (declared as standard) lower than one division,
- Err8** - tarring/zeroing operation time exceeded,
- NULL** - zero value from the AD converter,
- FULL2** - measurement range overflow,
- HI** - display range overflow,
- LH** - start mass error, the mass on the weighing platform is beyond the acceptable range ± 10 of start mass

31. TROUBLE SHOOTING

Problem	Cause	Solution
Scale switches off automatically	„t1“ parameter set to „YES“ (Power save)	In <P9 OTHERS> change <P9.3 AUTO SWITCH.> to „NO“
„LH“ appears on the display	Weight pan not empty when switching on	Unload the pan. Indication returns to zero

32. TECHNICAL PARAMETERS

32.1. Checkweighing scales of T series

Scale type:	WPW 0,6/T1	WPW 1,5/T1	WPW 3/T1
Max capacity	0,6 kg	1,5 kg	3 kg
Readability	0,2 g	0,5 g	1 g
Tare range	-0,6 kg	-1,5 kg	-3 kg
Pan size	200×150 mm		
Work temperature	-10° to +40°C		
Interfaces	RS 232, RS 485		
Ingress protection rating	IP 66/67		
Power supply	230V AC, 50Hz		
Battery operation time	Up to 9 h		
Display	LCD with backlight		

Scale type:	WPW 6/T2	WPW 15/T2	WPW 15/T3	WPW 30/T3	WPW 60/T3
Max capacity	6 kg	15 kg	15kg	30 kg	60 kg
Readability	2 g	5 g	5 g	10 g	20 g
Tare range	-6 kg	-15 kg	-15 kg	-30 kg	-60 kg
Pan size	250x300 mm		410x410 mm		
Work temperature	10° to +40°C				
Output signal	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC, 50Hz				
Battery operation time	Up to 9 h				
Display	LCD with backlight				

32.2. 1-load-cell scales of H series

Scale type:	WPW 3 H1/K	WPW 6 H2/K	WPW 15 H2/K	WPW 15 H3/K	WPW 30 H3/K
Max capacity	3 kg	6 kg	15 kg	15 kg	30 kg
Readability	1 g	2 g	5 g	5 g	10 g
Tare range	-3 kg	-6 kg	-15 kg	-15 kg	-30 kg
Pan size	150x200 mm	250 x 300 mm		410 x 410 mm	
Work temperature	- 10° to +40 °C				
interfaces	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC 50Hz, accumulator 6V 3Ah				
Battery operation time	Up to 9 h				
Display	LCD				

Scale type:	WPW 60 H3/K	WPW 150 H3/K	WPW 60 H4/K	WPW 150 H4/K
Max capacity	60 kg	150 kg	60 kg	150 kg
Readability	20 g	50 g	20 g	50 g
Tare range	-60 kg	-150 kg	-60 kg	-150 kg
Pan size	410 × 410 mm		500 × 500 mm	
Work temperature	- 10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

Scale type:	WPW 150 H5/K	WPW 300 H5/K	WPW 60 H5/K	WPW 150 H6/K	WPW 300 H6/K
Max capacity	150 kg	300 kg	60 kg	150 kg	300 kg
Readability	50 g	100 g	20 g	50 g	100 g
Tare range	-150 kg	-300 kg	-60 kg	-150 kg	-300 kg
Pan size	600 x 600 mm			800 x 800 mm	
Work temperature	-10° to - +40 °C				
interfaces	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC 50Hz, accumulator 6V 3Ah				
Battery operation time	Up to 9 h				
Display	LCD with backlight				

32.3. 1-load-cell scales of C/K series

Scale type:	WPW 6 C1/K	WPW 15 C1/K	WPW 30 C1/K	WPW 60 C2/K
Max capacity	6 kg	15 kg	30 kg	60 kg
Readability	2 g	5 g	10 g	20 g
Tare range	-6 kg	-15 kg	-30 kg	-60 kg
Pan size	290x360 mm			400x500 mm
Work temperature	-10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

Scale type:	WPW 150 C2/K	WPW 300 C2/K	WPW 150 C3/K	WPW 300 C3/K
Max capacity	150 kg	300 kg	150 kg	300 kg
Readability	50 g	100 g	50 g	100 g
Tare range	-150 kg	-300 kg	-150 kg	-300 kg
Pan size	400x500 mm		500x700 mm	
Work temperature	-10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

33. APPENDIX A

Barcode scanner programming (related to PowerScan QS600+ scanners).

Use special barcodes from „**Programming Guide**” to set all the necessary data.

Default baud rate of scanners is 9600 bit/sec.

1. Switching on EAN-13 code standard

Symbology Selection

SET

Enable EAN-13

END

2. Setting a necessary prefix for HTX

Label Transmit Configuration, Settings Global Prefix(es)

SET

Set Prefix

01 - this is a necessary prefix for HTX:

00 01 - HEX

END

3. Setting a necessary suffix for HTX.

Label Transmit Configuration, Setting Global Suffix(es)

SET

Set Suffix

CR - this is a necessary suffix for HTX:

0D hex

END

4. Setting label ID location

SET

LABEL I.D. = NONE

END

Notice:

RADWAG standard is - symbology specification – LABEL I.D. = NONE

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CERTIFICATE NO 71 100 C208